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ABSTRACT

Proceedings from a conference on the economics of higher education are presented. Following an introduction by Henry Wasser and opening remarks by Mina Rees, a paper by Gareth Williams is presented. In "The Buffer Under Pressure: An Examination of the British System of Financing Higher Education in Periods of Affluence and Stringency," it is concluded that channelling funds may be a more efficient and socially equitable way of deciding which institutions will prosper and which decline than a block system that treats all institutions in some sense equally. Comments by Harold Noah and Estello James are presented. Ulrich Teichler's paper, "Higher Education and Employment in the Federal Republic of Germany: Trends and Changing Research Approaches from the Comparative Point of View," suggests that constant reflection on research trends is essential and would accord special attention to those research approaches that deliberately place national preoccupations and biases in question and suggests that comparative research is perhaps the more important approach. Comments by Herman A. Berliner, Thomas Prapas, and Barry Bressler are presented. Howard Bowen in "Institutional Costs in American Higher Education: Past Trends and Future Prospects," foresees the possibility that results on the benefit side of the cost-benefit equation in higher education might be achieved at lesser cost. Bowen is optimistic about the ability of higher education to keep its costs steady for periods of time. Comments by Robert Payton and Harold Hochman are included. (SW)

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PROCEEDINGS OF CONFERENCE ON:

ECONOMICS OF HIGHER EDUCATION:

A COMPARATIVE PERSPECTIVE OF POLICY

AND DILEMMA

EDITED BY HENRY WASSER, CONFERENCE DIRECTOR

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**HELD MARCH 30, 1978
GRADUATE SCHOOL
CITY UNIVERSITY OF NEW YORK**

PUBLICATION OF CENTER FOR EUROPEAN STUDIES—ELLIOT ZUPNICK, DIRECTOR

HE 012 197

CONFERENCE SCHEDULE

9:15 a.m. - 11:30 a.m.

Mina Rees

President Emeritus, C.U.N.Y. (Graduate School)
Introductory Remarks

Henry Wasser

C.U.N.Y. (College of Staten Island and Center for European Studies)
Chairperson

Gareth Williams

University of Lancaster (England)

"The Buffer Under Pressure: An Examination of the British System of
Financing Higher Education in Periods of Affluence and Stringency"

Discussants:

Harold Noah

Dean, Teachers' College, Columbia University

Estelle James

Dean, Social and Behavioral Sciences, S.U.N.Y. (Stony Brook)

11:30 a.m. - 12:45 p.m. Lunch Break

12:45 p.m. - 2:45 p.m.

Jacques Fomerand

United Nations; C.U.N.Y. (Center for European Studies)
Chairperson

Ulrich Teichler

University of Kassel and Max Planck Institute for Educational Research
Berlin

"Higher Education and Employment in Western Germany: Trends and
Changing Research Approaches from the Comparative Point of View"

Discussants:

Herman Berliner

Associate Provost, Hofstra University

Thomas Prapas

C.U.N.Y. (College of Staten Island)

Barry Bressler

C.U.N.Y. (College of Staten Island and The Graduate School)

2:45 p.m. - 3:00 p.m. Coffee Break

3:00 p.m. - 5:00 p.m.

Elliot Zupnick

Director, Center for European Studies, C.U.N.Y. (Graduate School)
Chairperson

Robert J. Kibbee
Chancellor, C.U.N.Y.
Introduction

Howard Bowen
Claremont Graduate School
"Institutional Costs in American Higher Education: Past Trends and
Future Prospects"

Discussants:
Robert Payton
President, Exxon Education Foundation

Harold M. Hochman
C.U.N.Y. (Graduate School and Baruch College)

5:00 p.m. Reception

Conference Sponsored by Seminar on Comparative Higher Education,
Center for European Studies (Jacques Fomerand and Henry Wasser,
Co-Chairpersons) and organized by Henry Wasser.

Financed in part by
Exxon Education Foundation

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INTRODUCTION

Henry Wasser

The last decade in higher education has seen many "crises" emanating first from growth, then stagnation and finally decline. Analyses have come from a variety of scholarly disciplines, but the rigour of recent economics has probably contributed the most to comprehension. Moreover, the nascent discipline of comparative higher education has confirmed the advantages of viewing problems from several national perspectives. Consequently the CUNY Conference on "Economics of Higher Education -- A Comparative Perspective" was organized. The three papers by Williams, Teichler and Bowen proved to be substantial in scope and interpretation and invited wider dissemination of conference proceedings including pertinent remarks by commentators.

This introduction simply highlights some suggestions made by the contributors at the conclusion of their analyses. The complete reasoning must be followed in the papers.

Mina Rees' introductory remarks include the speculation that since the economic returns of higher education for the individual have apparently declined, the academic community will address itself more substantively to the question of how much is education worth for its own sake.

Gareth Williams concludes that channelling funds may be a more efficient and socially equitable way of deciding which institutions will prosper and which decline than a block grant system which treats all institutions in some sense equally. Moreover, shifting further funds from block grants towards the research councils, responsible in Britain for financing research undertakings, would result in universities being rewarded directly for the research of their staff.

Harold Noah, commentator, emphasizes the breakdown in the "club" approach in Britain to faculty appointment suggested by Williams. He goes on to stress that while a policy of a large degree of independence and reliance on fees may have dangers, it can produce flexibility and willingness to adapt to needs of clienteles that state-financed institutions do not have.

Estelle James raises the issues of whether costs of free student choice may be too great for the system to afford, whether differential funding might result in greater state control, whether social benefits should determine fund allocation, and she doubts that the state will finance such research.

Ulrich Teichler believes that constant reflection on research trends is essential and would accord special attention to those research

approaches that deliberately place national preoccupations and biases in question and suggests that comparative research is perhaps the most important means of overcoming the limitations of individual national presuppositions. Herman Berliner on Teichler wants to know the changing nature of the jobs held by university graduates in both countries, previously held by non-graduates, and the justification of free-tuition rather than fee tuition in West Germany since more than one-half of the college-educated population work in public service. Prapas thinks that Teichler himself has not fully recognized national ideological preconceptions -- growth as an unqualified good, uncritical acceptance of individual advancement with insufficient attention paid to equality of results. Bressler calls for further comparisons -- how graduates of specialized education in West Germany do in the labor market relative to the U.S.A. graduate and comparative economic consequences of the increasing number of older and part-time students.

Howard Bowen foresees the possibility that results on the benefit side of the cost-benefit equation in higher education might be achieved at lesser cost. Fairly modest changes, he asserts, in the modes of instruction can bring about great changes in cost without any obvious changes in outcomes. Contrary to expectations higher education costs in the U.S. have not risen year after year but rather over long periods have held steady or declined as in 1929-30, 1949-70 and the 1970s. Thus while Bowen is pessimistic about the ability of faculty income to keep pace with all civilian full-time income, he is optimistic about the ability of higher education to keep its costs steady for periods of time. Robert Payton on Bowen points out that the quality of professional life in higher education is far less agreeable, far less attractive, far less compelling professionally than it was not so long ago. Indeed, he relates the continued loss of comfortable characteristics of university life in order to sustain salaries will get worse even as salaries improve. Harold Hochman comments that the value of Bowen's paper is primarily descriptive and that he hopes for a positive model telling where supply and demand will take the market place or a normative model informing us where the market place should take us. He would have the education community gear its reward system to the market analogue.

OPENING REMARKS

Mina Rees

To-day's meeting is one of a series of conferences held here at the City University under the sponsorship of the Seminar on Comparative Higher Education. We are delighted to welcome back some of our friends whom we know from earlier conferences; and we look forward to the opportunity to get acquainted with a number of distinguished participants who are new to our deliberations.

Our conference focuses on the economics of higher education and the problems it faces because of the economic stringency within which it must operate. During the years in which funds were available for most of the ends we sought (at least in the United States), we learned the techniques of coping in an expanding universe. I was one of those whose major activities in higher education took place in those years. The tasks to-day are different. And I want to devote a few minutes to a rough delineation of the problems I see the universities facing in this period of planned decline enforced by financial stringency and by a new set of population considerations.

Though the age cohort is in decline, there are countervailing forces that tend to increase the student population. Two of these -- the rejection in recent years, in many countries of the West, of the notion of elitism as the appropriate basis for university selection, and the adoption of the principle that education from the cradle to the grave is a right of all the people in a democratic society -- have not only increased the costs but have also raised questions about the quality of higher education. Thus, when we talk about planned decline, we must recognize that, though the financial resources available to universities are in decline, some appealing plans for managing this decline must be ruled out since it is not evident that the numbers of students to be accommodated will be proportionately decreased nor is it evident that those who come to the university will come with the kind of preparation that universities have always, in the past, expected.

As one response to declining support, a number of colleges in this country have simply gone out of existence. And here, at the City University as well as at other institutions, there has been a staggering decrease in the number of faculty without an opportunity to consider the full impact of this decrease.

As to long range planning, I was interested in a communication from the president of Carnegie Mellon University published in a recent issue of that institution's Alumni News. The president said, in part, "It is imperative in a school of our size that departments do not try to cover the waterfront in their disciplines; that our colleges do not

try to cover a wide range of professional options that may be open; that the university does not attempt to be all things to all people. This philosophy means that we must look for areas in our departments and colleges where Carnegie-Mellon University may have or may develop a comparative advantage. We must structure our departments and colleges so that the department heads can concentrate their small faculties in a limited number of areas to achieve excellence in education and research.

Options such as that chosen at Carnegie Mellon are available in this country at private universities, and planning for public institutions is being approached in a variety of ways in our various states.

So much for a quick look at the problems of numbers and the dilemmas faced by those who must cope with possibly larger numbers and smaller budgets.

What of students' motivation to attend the university and the purposes the university should serve?

In a New York Times review of a new book by Ivan Illich, John Leonard chose to include the following quotation from the book: "The hidden curriculum (of the schools) translates learning from an activity into a commodity for which the school monopolized the market."

Our economists in the 1950's and 60's emphasized the concept of return on investment in urging the importance of schooling. The economic returns from Higher Education became the centerpiece for much of the argument for the expansion of educational opportunity and the main thrust of the thinking of the new groups that we sought to serve in the United States as a facet of our response to the requirements of the civil rights movement. Now that the economic returns to the individual have apparently fallen, the argument has backfired and there is considerable support for the notion that educational opportunity should be measured by the needs of the marketplace. If education is seen as a means to an end, state planning for the numbers needed seems justified. If, however, education is seen as a good in itself, then programs for the elderly, so often seen by the elderly themselves as the greatest good available for them, can make their demands upon society's resources, as well as programs for the traditional age group for many of whom there are no jobs in prospect. How much is education worth for its own sake?

The failure of the elementary and secondary schools to provide the needed and expected educational base for university education raises its own set of economic questions. Should we, perhaps, be assigning a larger proportion of our total resources for the financing of the lower schools where everyone has a chance to obtain the skills needed to operate in our increasingly technical society? Do we have too few students for our graduate professors and too many for our first grade teachers? If we had more money for education in the lower schools, would we know what to do with it? Is the difficulty one of lack of funds, or lack of a serious attack on the problems or lack of wisdom -- or perhaps all of these? Is this one of the basic issues we must face if we mean seriously to confront the central dilemmas of our situation: too many students in higher education, too little money, inadequate preparation, inappropriate motivation?

I leave these, and other problems, to your combined wisdom.

THE BUFFER UNDER PRESSURE:
An Examination of the British
System of Financing Higher
Education in Periods of
Affluence and Stringency.

Gareth Williams

The Basic Dilemma of Financing Higher Education and Some Alternative Solutions

Many of the problems of the public finance of higher education are common to most publicly provided services. Should the costs of providing the service be shared amongst individuals in accordance with the degree of individual benefit or according to some other principle such as insurance against risk or payment according to means?

There is in the case of higher education, a rather different issue which is in many ways even more fundamental. This is the problem of finding a mechanism by which considerable sums of public funds can be channelled into universities without infringing their claims to institutional autonomy and the legitimate claims of their staff to academic freedom while at the same time, ensuring that there is reasonable control over the use of public funds and that universities are administered broadly in accordance with the social objectives of the rest of society. In its report on the 1962-1967 quinquennium, the University Grants Committee, discussing the issue of financial accountability of universities to Parliament posed the issue thus:

"In their simplest (perhaps over-simplified) form those issues are two. On the one hand, can Parliament continue to exempt from the normal procedures of public accountability the expenditure of a sum of money amounting to over £200 million a year? On the other hand, can the principles of academic freedom, cherished and defended in this country for so long, be reconciled with the normal requirements of parliamentary scrutiny?" (U.G.C. 1968).

There are a number of ways of resolving this dilemma. At one extreme, the claims of universities to institutional autonomy are ignored. This is the case in Eastern Europe and to all intents and purposes in many countries of Western Europe also. In France, for example, "each year a certain sum is allotted in the National Budget for higher education, and the Secretariat, in conjunction with the National Council for Higher Education, then apportions a sum to each university. It is then the responsibility of each university council to draw up a detailed budget for the coming year. The university

councils typically consist of elected representatives of teaching and non-teaching staff as well as students. The university budget is then submitted to the State Secretariat, and once it has been approved no expenditure is permitted which falls outside the budget." (Blaug and Woodhall, 1978)

Similarly, "all higher education in Sweden is financed by the State and all institutions of higher education are owned and administered by the state" (ibid.). It should be added, however, that one of the aims of current higher education reform in Sweden is to decentralise decision making and to loosen the control of central state bodies.

In the Federal Republic of Germany there is no central government control of universities but the eleven states or *Länder* that constitute the Federal Republic have similar responsibilities for financing and administering universities as has the central government in France. In Germany, as in France, university teachers are in effect civil servants and are subject to similar loyalty oaths, a requirement which is currently the subject of considerable controversy in the Federal Republic.

Even where universities are permitted a much greater degree of autonomy as in the United Kingdom and the Netherlands, there has been established a parallel system of higher education which is subject to detailed financial control by the public authorities. Most Western European countries, with the notable exception of Italy, developed in the 1960's a sector of higher education separate from the universities and under more direct public control. (See OECD 1972).

There were a variety of reasons for establishing these alternatives to universities -- costs, manpower needs, egalitarian social policies, etc. -- but all derived in large part from the belief that universities were insufficiently under public control and were pursuing academic aims that were at least in part at variance with the social and political aims of the governments that were expected to find most of the funds for the rapidly expanding systems of higher education. In setting out the "binary policy" in Britain which established the polytechnics as alternatives to universities the Minister of Education responsible claimed that "the universities were not in a position to give us what we needed." (Boyle and Crosland, 1971).

It is, of course, necessary in considering the financial control of universities to recognise that the institutional autonomy of universities and the academic freedom of individual teachers to teach and do research according to the dictates of their individual consciences, are two separate issues. It may be easier for a government which exercises detailed financial control over universities to exercise political control over the appointment of staff and the recruitment of students, but there is no necessary reason why it should. There is every reason to suppose, for example, that the academic freedom of the individual university teacher in Sweden is at least as great as that of his British counterpart.

At the other extreme of the spectrum, the dilemma about state financing without state control of higher education can be resolved by having no state finance. There are a number of different ways in which universities can be entirely independent of state financial control. The British idea of a university up to the first half of the Nineteenth Century was of an independent property owning corporation with a charter from the monarch. Income from the ownership of property gave universities freedom, not only from state control, but also

freedom from the demands of their students, who were probationary members of the corporation, not paying customers, and also from conditions laid down by benefactors and donors. Right up to the beginning of the second World War, British universities obtained a third of their income from their own resources. The Robbins Report commented favourably upon this state of affairs and it remains an ideal for those British academics who believe that the events of the 1960's and 1970's have allowed the government too much influence on universities.

"The answer lies in what was done in the founding of colleges in the ancient universities. What the universities need is not income dependent upon Parliamentary grants, but capital of their own. A formula should be worked out by which their current incomes would be capitalised and the sums made over to them in the form of marketable government securities. . . . Historical experience and political thought teach us that only men who have property can fully enjoy freedom: the only genuinely autonomous bodies are also the property owning ones." (Beloff 1977).

It was of course this belief in the financial autonomy deriving from property ownership that was partly responsible for the creation of the land grant colleges in the United States.

There are two principal problems with this method of financing universities. One is that financial autonomy may permit freedom -- it also breeds corruption and indolence. Adam Smith's much quoted passage about the Oxford University of this day is a warning against the dangers of allowing universities too much financial independence.

"If the authority to which he (the university teacher) is subject resides in the body corporate, the college or university, of which he himself is a member, and in which the greater part of the other members are, like himself, persons who either are, or ought to be teachers; they are likely to make a common cause, to be all very indulgent to one another, and every man to consent that his neighbour may neglect his duty provided he himself is allowed to neglect his own. In the University of Oxford, the greater part of the public professors have, for these many years, given up altogether even the pretence of teaching." (Quoted in Blaug 1976).

He continues later, "The discipline of colleges and universities is in general contrived not for the benefit of the students but for the interest, or more properly speaking, for the ease of the masters."

Not that the thought of State control or State finance of universities ever crossed Adam Smith's mind as even a remote possibility in his worst nightmares. Indeed, had he thought upon the matter he would probably have agreed with Blaug that the effect of State financing would make little difference, "the behaviour of university teachers as utility-maximisers gathered together in a kind of syndicate-club to pursue common ends is broadly predictable."

What Adam Smith favoured of course was the finance of higher education through fees and he claimed that the teaching at his own university, Glasgow, where the bulk of the income of professors came from students' fees, compared very favourably with Oxford where stipends depended mainly on university property income.

The belief that finance of universities through student tuition fees would provide universities with a substantial measure of autonomy from government control and bring about greater efficiency in their operations has been responsible for the establishment in Britain of the first "Independent University" (i.e. independent of direct state

subsidization of the institution) since the central government started playing a major role in university finances during the present century.

The university's first Principal argues that "the whole notion that universities should receive most of their income out of monies voted annually by Parliament should be abandoned. . . . Most university income should derive from fees, and these should be at a realistic level. . . . Our experience at Buckingham suggests that there is an improvement in student morale when students are brought up against the true costs of their education." (Beloff 1977).

The other difficulty with the finance of higher education through property ownership and endowments is that such sources of income are far too inflexible to permit the expansion of higher education at anything like the rate that was needed during the post second World War period. Even Beloff concedes that the need for growth might necessitate the injection of extra funds.

"It is likely that however ingenious the original formula for replacing the present system might be, modifications would be needed from time to time. Extra funds might also be needed to cope with inflation or other developments."

The third solution to the problem of reconciling state finance of higher education with institutional autonomy is for universities to receive their income from a variety of sources. Even if all these sources of income derive ultimately from public funds, the existence of a number of different mechanisms for the allocation of funds will prevent any single bureaucratic or political agency from being in a position to exercise dominant control.

A diversity of sources of income was advocated by the Robbins Committee.

However, despite the strong belief of the Robbins Committee that, "it is a source of strength that public finance should come from more than one channel" the situation in 1975 was that over 80 per cent of the income of British universities was in the form of direct government subsidy to universities and in the non-university sector, the proportion was higher. Income from student fees accounted for only just over 5 per cent of the total income of universities. The government's sudden announcement in 1977 that for the academic year 1977/8 and henceforward it would assume that universities would be receiving 20 per cent of their income in the form of student fees and that government subsidy to institutions would be adjusted accordingly, was, however, received with dismay by universities rather than as a move towards greater financial autonomy which Beloff and Caine and many others were claiming had been eroded as a result of the massive expansion of the 1960's. The reason for the dismay was, of course, the widely held view that the existing methods of finance combined safeguards of academic autonomy with an even greater benefit-financial security.

We now turn to this British attempt at reconciling the claims of university autonomy and accountability for the use of public funds devoting particular attention to how that attempt has fared during the somewhat different stresses and strains of the 1960's and 1970's. This is the establishment of a "buffer", the University Grants Committee, as a kind of neutral intermediary between the universities on one hand and the politically elected government on the other.

The Development of State Finance of Higher Education in Britain in the Twentieth Century

There are two separate systems of higher education finance in Britain -- the 'public' sector, comprising the polytechnics and other institutions of advanced further education, and the 'independent' sector, consisting of the universities. The public sector institutions are owned and administered by local education authorities and their institutional autonomy is, as indicated above, broadly subordinated to social needs as perceived by various external agencies.

The financing of the public sector raises a number of interesting issues: for example, whether control by local authority represents a greater or lesser constraint on institutional autonomy and academic freedom than control by central government. There is also the problem of pooling of financial resources arising from the fact that a high proportion of students attend polytechnics in local authorities other than the one in which they are resident.

Like many British administrative arrangements which have been imitated elsewhere, the UGC was not created in its present form and neither did its establishment result from any carefully thought out theory of university finances. Rather it has evolved from a series of ad hoc arrangements until by the time of the post Robbins expansion of the mid-1960's, it could be claimed that the UGC system did represent a coherent theory of university financing that in a single administrative mechanism brilliantly resolved most of the dilemmas in the public finance of higher education alluded to in the previous section. The early history of the UGC is well documented (e.g. Berdahl 1959 and HMSO 1968) and only a very brief account is given here of its development from its creation in 1919 to the beginning of the post Robbins expansion in 1962.

Significant state aid to universities came late in Britain, though Scottish universities received small grants from 1706 onwards, which no doubt helped to make the Act of Union between Scotland and England appear marginally more attractive to some influential and articulate Scots. Subsequently in the 19th Century, very small grants were received by the colleges of the University of Wales and London University. It was only in 1889 that the first general grant of £15,000 was made to help about ten university colleges (but not Oxford and Cambridge). In this first allocation of public funds an important principle was established. "The Treasury thought it would not be desirable to alter the amounts of the subsidies with such frequency as to produce constant uncertainty, though at the same time they did not want to stereotype the subsidies for too long or to discourage local initiative":

"My Lords are of the opinion that adequate regard would be had to both these considerations if the distribution of the grant of £15,000 should Parliament see fit to continue it, were liable to be reviewed every five years." (quoted in CVCP 1977a).

Thus was born the principle of the five-yearly or quinquennial settlement which served British universities well for well over three quarters of a century, until it collapsed in the near hyper-inflation and stagnating demand for higher education of the mid-1970's. The first few quinquennial settlements were made on the advice of ad hoc committees set up by the Treasury to advise the Chancellor of the Exchequer and Parliament.

In 1911 a Standing "Advisory Committee on University Grants" was established which established a number of general principles which have been adhered to ever since.

"Firstly, the grants were to be paid over to the universities' general income, to be expended under the direction and at the discretion of the universities; there was no earmarking.

Secondly, the grants were to be treated strictly as recurrent income to meet annual expenditure on teaching and research of a university character and standard; they were not to be used for capital expenditure or the payment of interest on loans or mortgages.

Thirdly, they were not to be used for assistance to students in the shape of scholarships, remission of fees or contribution to meet deficits of students' clubs or hostels." (CVCP 1977a).

In addition, the Committee initiated a series of 'visitations' to universities in receipt of grant: these were informal and from the outset included discussions with academic staff and students as well as administration and governing bodies.

This Advisory Committee on University Grants would probably have remained the permanent agency responsible for advising the government on university grants had it not been for the first World War during which the Committee was moribund and after which the universities were in a desperate financial situation as a result of low student numbers and inflation during the war. In 1919 a permanent University Grants Committee was established and a grant of just under £700,000 was made to universities which amounted to just under 30 per cent of their total income. The proportion remained at about that level up to the outbreak of the second World War.

The original terms of reference to the UGC, which was established not by Statute but by a Treasury Minute, were "to enquire into the financial needs of university education in the United Kingdom and to advise the Government as to the application of any grants that may be made by Parliament toward meeting them."

In addition to the principles established by the old Advisory Committee, two features of the UGC were important for the development of the subsequent theory of its role. First, the overwhelming majority of its members were academics, though selected so as not to represent any particular institutions, second, the Committee reported directly to the Treasury and not through the intermediary of the Ministry of Education. The main reason for the last point was probably that there were separate Ministries or Departments of Education for Scotland and Ireland, and it was believed desirable to treat all universities as part of a single national system. This administrative convenience was however raised to the status of a principle, representing, it was claimed, a self-denying ordinance by the government not to interfere in academic matters. A Minister of Education it was believed might have been tempted to dabble in such matters if he had ultimate responsibility for the universities.

Between 1945 and 1975, the block grant to universities from the UGC came to comprise of over 80 per cent of their annual income. The £15,000 of 1889 which had become £700,000 in 1919, was £35 million⁽¹⁾ in 1956, £240 million⁽¹⁾ in 1966 and £450 million⁽¹⁾ in 1974.

There were by the end of the 1950's increasing doubts whether the rather informal relationship of the UGC with the Treasury was an appropriate way of disbursing such large sums of money which were becoming such an overwhelming proportion of the total income of universities. There were two arguments in particular why it was coming

¹Includes capital grants.

to be felt that this arrangement was unsatisfactory. On the one hand, it was believed that "a change should be made because of the growth in the sums of money involved and the fact that it was considered undesirable for the Treasury to be directly responsible for the spending of such large sums of public money." (CVCP 1977a). The point here is that the role of the Treasury is normally to try to restrain the spending of other government departments. While the amount spent on universities was small no serious role conflict was apparent. In particular, the growth in government grants for capital expenditure, which as shown below are regulated in much more detail than recurrent expenditure by the UGC, was dragging the Treasury increasingly into areas of debate about academic policy.

The other argument against direct Treasury involvement with the UGC as the grants became larger, was that the Treasury was responsible for overall government economic policy and the growing size of the university grant made it increasingly likely to be determined in relation to overall government economic policy rather than in relation to educational policy as a whole. There was no separate Minister to plead the special case of the universities in periods of financial stringency.

The outcome of this debate was that in 1964 there was a change in administrative arrangements and subsequently the UGC reported not to the Chancellor of the Exchequer but to the Secretary of State for Education and Science. Henceforward the UGC budget was considered by that Department and submitted by it to the Treasury as part of the overall education budget. University policy had become an integral part of overall education policy.

Some observers saw this as the beginning of the end for the institutional autonomy of the universities and the debate began which led in 1973 to the establishment of a University independent of direct government subsidy. The first Principal of that institution was Max Beloff, already cited above as a strong opponent of recurrent government finance.

However all existing universities and the great majority of academics accepted that universities were now too big to be able to expect to conduct their affairs independently of national education policy. Moreover, they were in the throes of the biggest expansion and as a result of state finance the most prosperous period in their history. They were, therefore, more concerned with seeking a reaffirmation of the principle that the money received by individual universities for recurrent expenditure would have no strings attached, than seeking alternative forms of financing. The UGC was concerned to establish formal machinery which would cope with more and bigger universities as well as the old informal machinery of periodic 'visitations' and (no doubt largely apocryphal) meeting in the Atheneum Club had served the small British university system before 1960.

The next major step occurred in 1967 and seemed to some to confirm their suspicions of increasing Government encroachment on the institutional autonomy of universities. The Public Accounts Committee of the House of Commons undertook a review of the machinery for disbursing the funds they voted to universities and colleges. The principal issue with which the Committee was concerned was the degree of access which Parliament should have to the "books and papers" of the University Grants Committee and of the universities.

The debate before the Public Accounts Committee to which evidence was given by academics, university vice-chancellors individually and collectively, and the UGC itself, was far-reaching and wide ranging

and constituted an important enquiry into the whole issue of state financing of universities.

The Committee's Report and the supporting evidence will, in the view of the UGC itself, "long remain the locus classicus on the very important and far reaching issues involved." (UGC 1968).

The enquiries of the Committee revealed that the universities and the UGC were already subject to a substantial measure of public accountability. It had always been possible for Parliament to scrutinize the basis on which funds were made available to universities and the right of Parliament to question particular financial transactions in universities was not disputed. The recommendations of the Committee's Report were, therefore, mainly concerned with what was essentially a technical issue, the extent to which the House of Commons' own relevant officer, the "Comptroller and Auditor General" should have direct access to the books of the UGC and of individual universities. The principal recommendation of the Committee was that:

"with effect from the beginning of the next quinquennium (that is, from 1st August 1967), the Comptroller and Auditor General should be given access to the books and records of the University Grants Committee and the universities." (PAC 1966).

This recommendation was accepted by the government and gave rise to some exaggerated claims about the threats it posed to the institutional autonomy of the universities and the dangers to academic freedom itself. However, the view of most informed commentators was that the new arrangements made little difference to the underlying situation and might in fact be helpful to the universities. Beloff believed that "the fuss about the CAG is diverting attention from far more important inroads on university autonomy already involved in our increasing dependence upon public funds." (Beloff 1968).

Another authoritative commentator did not see how academic freedom could possibly be compromised, "It is difficult to see how they (The C.A.C.) would affect at all what academics may do at present. The universities work within financial constraints, but within these are freer than most institutions to do what they want. . . . The AUT (Association of University Teachers) listed the components of academic freedom: it is difficult to say that any of these would be affected by efficiency audit. They were: the right to fix entrance requirements; the selection of staff; the right to develop curricula; the right of faculties to work out their own priorities subject to the authority of the senate; the right of university teachers to treat their own subjects in a way they think best; their right to follow their own line of research within departmental or personal financial limits irrespective of whether to anyone else it seems promising or useful and the freedom to publish." (Kogan 1969).

The Vice-Chancellors of two universities that were among the first to have their books examined were, it appears, pleasantly surprised. The Vice-Chancellor of Sussex University found it "an interesting and useful visit." (Briggs 1969). The Vice-Chancellor of Lancaster's comment had possibly a sharper edge. "It can be concluded that the CAG's visits will be helpful to university administrations" (Carter 1969).

It may of course be that British academics viewing with caution the power of administrators in American universities are not altogether pleased with the idea of having their own administrations strengthened.

The UGC System of University Finance

Despite these administrative changes the quinquennium of 1967-1972 will probably be seen by historians as marking the high point of the UGC system of financing. It had proved able to cope with the explosive expansion of the previous five years; it had established machinery of statistical and accounting guidance of universities to replace the less formal machinery that was possible when the universities and the sums of money involved were much smaller; it had managed to guide the universities in directions required by government policy (e.g. overall expansion, differential expansion in favour of science and technology) without infringing what were seen as essential academic freedoms such as those in the AUT list enumerated above; and finally it had encompassed a degree of financial accountability of universities to Parliament that did not appear in practice to be very irksome. Even commentators such as Beloff had to admit that the danger to university autonomy was potential rather than actual.

The cornerstone of the UGC system of university financing was the quinquennial block grant. Indeed, so much was quinquennial financing an essential component of the UGC's activities that the two are often written about as if they were synonymous. Yet there are important aspects of the UGC's activities which are independent of quinquennial financing. Indeed as will be shown below, the quinquennial system as it has been established for over three quarters of a century, formally came to an end in 1977 having been, in effect, in abeyance since 1975. This has clearly not resulted in the effective demise of the UGC.

The key features of the quinquennial system are first that university recurrent income was guaranteed for fixed five year periods, whatever the subsequent vagaries of the economy and second, that once an individual university knew its recurrent grant it was free to spend it in accordance with its own academic priorities.

By 1967, this simple principle had developed into an elaborate machinery of consultation and guidance and a cycle of events had been established which "married" the government concern to ensure that the large sums of public money devoted to universities were spent in accordance with national policies while at the same time, not unduly infringing the autonomy of individual universities.

The first step was the determination by the government of its overall policy for universities and higher education generally. The Robbins Committee recommended that "courses of higher education should be available for all who are qualified by ability and attainment to pursue them and who wished to do so."

This criterion was accepted by all successive governments at least up to 1975 and established the principle that student demand should determine the extent and orientation of higher education expansion. It is interesting to speculate whether university autonomy and the requirements of academic freedom outlined earlier could have survived if the government had decided on some other criterion such as national needs for qualified manpower or the pursuit of social equality.

The Robbins "principle" was operationalised by asserting that "qualified for entry" to higher education meant success in the GCE 'A' level examinations and "wishing to do so" meant applying for a place. It then became quite straightforward for government statisticians at the Department of Education and Science to estimate the

likely growth of demand for higher education of the forthcoming quinquennium. In fact such forecasts usually proved wrong, but this does not alter the fact that making the projections was a quite straightforward task. The results of the projections which were discussed with the UGC formed the main basis for the first even in the quinquennial planning cycle, the issue of planning guidelines to universities. These guidelines were issued in 1965 for the 1967-1972 quinquennium and in 1970 for the 1972-1977 quinquennium. They indicated that the total number of students that the government anticipated the universities would have to cater for during the following five to ten years and also how the government would like to see this total number divided between students in "arts-based" and "science-based" subjects and between postgraduate and undergraduate students.

These guidelines were next discussed within each university; the manner of the discussion being entirely determined by the university itself. Out of these discussions each university prepared its own proposals with respect to what it wished to do during the following quinquennium in terms of student numbers in each of the main subject areas and what it would cost to do it. These proposals were submitted to the UGC about a year before the end of the current quinquennium.

The individual proposals from the 44 universities in receipt of Exchequer Grants were evaluated by the UGC and its separate subject committees. The main committee of the UGC prepared a detailed memorandum setting out their recommendations about the cost of providing for the global number of students indicated by government policy. Detailed discussions of this memorandum then took place between officials of the UGC, the DES and the Treasury. Finally the government made its firm decision about the number of students it wished to see in universities and the finance it was willing to provide for them.

The UGC's role in determining the total size of the university sector may be considered rather passive: responding as it does to the aspirations of the collectivity of individual universities on one side, and to government policy on the other. Its section function is much more active. This is the distribution of the total sum between the individual universities.

The UGC has never published in any detail its methods of allocating grants to individual universities.

In 1968 the factors that were taken into account were listed thus:

- (i) Increase in the cost of existing commitments;
- (ii) Increase in student numbers;
- (iii) Cost of new developments;
- (iv) Income from non-Exchequer Sources;
- (v) Adjustments for under- or over-financing.

There is an implication that these are the order in which each item entered into the calculations. The increase in cost of existing commitments result mainly from what has come to be known as incremental 'creep' or incremental 'drift' in academic salaries resulting from incremental salary scales and a rising average age of staff as expansion slowed down. The increase in student numbers assumed for each university is a result of an adjustment of the number each university felt it could cope with to meet the overall national policy enunciated in the guidelines. The treatment of unit costs per student has been explained only sketchily.

"In assessing the financial provision required for the additional students the Committee and its subject sub-committees started from a calculation of current unit costs and staff/student ratios. They then

gave very careful consideration to the appropriate costing of the additional numbers of students expected in each subject field. There were particular areas where they felt it reasonable to allow, in their financial calculations, for some reduction in unit costs and associated staff/student ratios; others where it seemed necessary to allow for some increase. In most of those areas where little or no increase of student numbers was expected, unit costs and staff/student ratios were assumed to remain more or less unchanged.

Since student costs vary as between different faculties and as between undergraduates and postgraduates, we had to make an assessment of the extent to which the "student mix" would change in the years between 1966-67 and 1971-2. In doing this we took account of two main considerations. First, it was clear from recent studies that the pressure of demand from the schools for places in Science and Technology could not be expected to increase much, if at all. There were particular areas where demand continued strong, for example Medicine; but the general picture was one of a levelling-off of the science-based entry. On the other hand, the pressure of demand for places in Arts and Social Sciences, already relatively heavy, would continue to increase. Secondly, there had already, during the 1962-67 quinquennium, been a very substantial expansion of postgraduate activities; indeed the proportion of graduates staying on to do postgraduate work had run well ahead of the Robbins Committee's projections. We felt that it would be desirable to give priority, within the limited resources likely to be available, to the maintenance of the flow of undergraduate students from the schools and, in the light of recent Manpower Reports, to moderate the growth of postgraduate education of the more traditional types." (UGC 1968).

The cost of new developments "is used to mean developments which cannot reasonably be regarded as covered by the financial provision to be made, at the assumed unit costs for increased student numbers." (UGC 1968). The notion seems to be of a fixed cost component of setting up new courses corresponding to the constant term in which total departmental costs are made dependent in a linear regression analysis on numbers of students in a department. These costs were investigated by Verry and Davies, 1976.

The adjustment for "income from non-Exchequer sources" is the adjustment to take into account income from fees. However, account appears also to be taken of endowments and donations and this is commonly believed to discourage universities from seeking private funds and donations to meet recurrent expenditure as some part at least of any such money received is apparently deducted from the next recurrent grant. A private donation thus becomes, in effect, a donation to the university system as a whole rather than to a particular university.

Finally the UGC consider whether the grants to individual universities "built up in the way described above need to be moderated on account of university's relative cheapness or expensiveness." There are many good reasons why unit costs should differ between universities "and we would not expect, or seek, to achieve uniformity." In 1972 these methods were further developed and there is little doubt that in 1972 the distribution to individual universities was based on a formula derived from cross-sectional regression analysis of departmental costs which give each university department a fixed sum plus a variable amount for each anticipated student. The precise formula used, indeed whether a formula is used, has always been considered confidential.

The reasons for the secrecy are two-fold. In the first place,

the formula is not applied mechanically. Rather the allocations derived by the formula are modified by the Committee in the light of what are seen as the special needs of each university. Secondly, the grant to each university is in the form of an unearmarked block grant with the aim of allowing each university to distribute its income in accordance with its own internal priorities. It is felt that if the criteria of the UGC allocation were known this might prejudice the debate within universities about how they should allocate their resources. The UGC also believes that not disclosing the precise formula leaves individual universities "scope to adapt themselves to variations in the pressure of demand for admission which could not be envisaged when the student number projections were made." (UGC 1974). The interpretation of this remark, published at a time when student numbers were falling well below projections is almost certainly that if the precise unit costs, on which the grant allocation was made, were known the universities would have found it harder to resist claims that their grant should be reduced. However, in making its allocation to universities the UGC does indicate in general terms any special considerations, such as projected new developments, that have been taken into account. Each university is free to accept or reject this guidance as it thinks fit.

To this basic block system a number of modifications had evolved during the course of time. Quantitatively the most important is the treatment of academic salaries. Before the second World War, each university was encouraged to act as an independent bargaining unit and decide the level and structure of salaries it would offer its staff in the light of its own educational aims and its own resources. However, since 1949 there have been nationally agreed salary scales for all university academic staff, and until 1976/7, the government undertook to supplement the quinquennial settlement to compensate universities for any national salary award. Although the arrangements by which national pay awards have changed several times since 1949 all have depended ultimately on how much the government was willing to pay.

The treatment of changes in other university costs has been more complicated. The principle of fixing the recurrent grant for periods of five years was established in a period of stable prices and the government commitment was to a fixed grant in money terms. In periods of inflation, therefore, having a fixed money sum can still leave universities financially vulnerable. From 1962 onwards the principle was established of annual negotiations for reimbursement of all or part of the loss in real income that occurred as the result of inflation. For this purpose a special price index known as the "Brown" (the name of its originator) index of university costs, was instituted.

Capital expenditure of universities is dealt with outside the quinquennial system according to a completely different set of arrangements. It is really through detailed control of the annual building programmes of individual universities that the UGC and through it the government, was able to determine the size and orientation of university expansion during the 1960's.

The control of the UGC over capital expenditure is essentially two-fold. In the first place any substantial item of expenditure must receive the prior approval of the UGC, and UGC approval depends in part on overall government economic and education policy, in part the extent to which it duplicates what other universities are doing and in part on the basis of its likely implications for subsequent recurrent grants. The second control the UGC has, is over the cost

limits allowed for each building or item of capital expenditure. Thus, once a building is agreed the university may make whatever architectural arrangements it likes subject to the cost per student place not exceeding a specified limit.

There are special arrangements for the building of student residences for which universities are expected to finance about 50 per cent of the costs by borrowing on the open market. This was a factor contributing to the financial crisis of 1975/6 discussed below, because the general rise in interest rates raised very considerably the financial commitments of universities which had borrowed in the past to provide student residences.

The Quinquennial System since 1972

The financing procedures outlined above had fully developed by 1972. Never was a quinquennial grant better prepared and better planned than that of 1972-77. Not only had the system coped with the explosive growth of the 1960's during which student numbers had more than doubled but it was adapting itself to the anticipated slower growth of the 1970's. The only slight cloud on the horizon in the 1972 quinquennial settlement was that the government decided, in agreeing the overall sum for the settlement, that the overall staff/student ratio should be eased from 8:1 to 10:1 by 1982, and that the proportion of postgraduate students that had been growing very rapidly should fall from 19 per cent to 17 per cent by 1977. (White Paper, 1972). Even the issue of supplementation of recurrent grants to allow for the erosion of the real value of grants through rising costs which had caused increasing irritation and inconvenience to universities during the 1967-72 period appeared to have been amicably settled. The government agreed to supplement the recurrent grants fully for any negotiated increase in academic salaries and up to at least 50 per cent of the increase in the Brown index and to negotiate annually for the remainder.

This was the situation when the universities confronted the world economic crisis which began in 1973/4.

The first effect felt by the universities was that they received no supplementation in 1974, for rise in the Brown index that had occurred during the previous year. Since inflation was by then running at a rate of over 20 per cent per year, the impact on university budgets was alarming. The following year universities received full supplementation but no compensation for the 'lost' year. The effect was that the 1972 quinquennial settlement was permanently reduced by 20 per cent of non-academic salary expenditure or 10 per cent in total.

An even more severe crisis was feared when the grant for 1976/7 was announced as a "cash limit" which allowed for an overall rise of 10 per cent in university costs during the period but was accompanied by a government warning that no further funds would be available during the period for any reason, including any rise in academic salaries, that might occur. In the event as a result of pay policy academic salaries rose by considerably less than 10 per cent.

The imposition of cash limits was part of a general attempt to restrain all public expenditure and was the first time that universities had been so directly affected by overall economic policy. There was serious concern during 1975 and 1976 lest some universities should become bankrupt and there were a few isolated cases of senior staff accepting early retirement and salary cuts. "Freezing" of vacancies was almost universal.

It was common amongst universities to attribute all the ills of the 1972-77 quinquennium to government policy arising from inflation and economic depression. However, another factor contributing to university problems and which makes it easier for the government to reduce the real value of universities' income was the fact that student demand for university places was falling far short of what had been anticipated at the beginning of the quinquennium. In 1972 it had been foreseen that there would be 306,000 fulltime students in universities by 1977. In fact by 1974 it was already evident that the actual number would be at least 10 per cent fewer. The government refusal to supplement the recurrent grant in 1974 was undoubtedly influenced in part by this shortfall.

The problems caused by inflation and the public expenditure cuts and the stagnation of student demand virtually halted the preparations for the 1977-82 quinquennium, which would in normal circumstances have started in 1975/6. The universities were not anxious to seek a five-year commitment in what would have been very unfavorable circumstances and the government was apparently reconsidering the whole issue of university recurrent expenditure. In particular, the government was showing signs of wishing to bring it within the ambit of the rolling five-year planning machinery of the Public Expenditure Survey Committee (PESC) which since 1962 had been used as a basis for all other public expenditure.

The difference from the old UGC quinquennium is that the PESC proposals are revised annually, and the government makes a firm commitment for only the first two years -- the remaining three years being indicators only, of the implications of current government policy -- which may well change, especially if the government changes. Suggestions for a rolling quinquennium for universities had been considered by the Robbins Committee and had been recommended by a House of Commons Committee of Enquiry in 1972. (House of Commons, 1972).

In 1977 in place of the new quinquennial grant which would, in the normal course of events have been announced, the government announced a new cash limit for universities and at the same time, its intentions for the following triennium (three year period). This differed from the old quinquennial grant not only in being for a shorter period, but in that the government was making no commitment, merely giving an indication of the implications of its current policies, and also in that it was not the result of a detailed process of consultation with the UGC and the university system but a statement of government intentions.

There were, therefore, good grounds for believing that by 1977/8 the old quinquennial system had collapsed and with it the whole theory of the UGC as a buffer between the state and the universities providing a channel for substantial public finance without political control.

Those who had been expressing forebodings since 1964 about the increasing state involvement in the control of universities, as a result of the dominance of state finance, appeared to have been entirely justified. Beloff (1977) quite understandably could not help expressing some self-satisfaction . . . "when a number of vice-chancellors were complaining about the financial constraints on universities, I pointed out that the progenitors of the idea of an independent university had, a decade ago, forecast precisely this situation. It was already obvious to them that the apparent flexibility of the British system depended on there being a climate of expansionism and that as soon as resources became scarce, the real battle would

be joined." (Beloff 1977).

But is this true? Have the financial crisis and the stagnating demand for higher education of recent years meant the collapse of the British idea of university financing? Have those countries from Israel to Australia which have imitated the UGC been copying a recipe for failure? Would the acceptance of recent proposals by Polytechnic Directors and others for some form of Polytechnic Grants Commission be merely a recognition by the government that such an arrangement offers a powerful instrument for controlling institutions of higher education? To take this view is to take a very narrow view of the role of the UGC. It is to confuse quinquennial financing with the more general role of the UGC as a buffer between universities and the state.

However, there are also doubts about the real power of the UGC to resist a government that firmly intends to bring the universities to heel. It will be recalled that the UGC has no statutory existence. Against this the UGC itself and its various sub-committees are composed overwhelmingly of academics who owe no particular loyalty to Ministers or to the government. They, and more usually their Chairman representing them, negotiate with the government on behalf of universities collectively. However, this apparent independence must be weighed against the fact that appointments to the Committee are made by the Secretary of State for Education and Science. Clearly new appointees are likely to be considered "safe" by the government of the day.

The second and probably most important aspect of the UGC's role as a 'buffer' is that it acts as the intermediary between government and individual universities. The Department of Education and Science has no direct involvement in the allocation of either recurrent or capital expenditure to any individual university. This is the real guarantee of academic freedom from political control and sets not unreasonable limits to institutional autonomy. The Department of Education and Science decides (in consultation with the UGC) the overall size of the university budget and makes known the general criteria on which this is based. It is the UGC composed of academics which, in conditions of secrecy, allocates this global sum between individual universities. The secrecy of the precise criteria for allocation is paradoxically enough one of the guarantees of university freedom (see above). Thirdly, and finally, the recurrent grants from the Government to the UGC and from the UGC to individual universities are made in the form of block grants. There is to all intents and purposes no "earmarking" of recurrent funds for specific purposes. Certainly the government and the UGC have been increasingly generous with their 'advice' in recent years, but each individual university has been free to interpret this advice as it thinks fit.

The block grant, as well as protecting academic freedom, also, it is claimed, encourages efficiency in the use of resources. In economic terms it ensures that the marginal utilities of resources spent under different budget heads are as equal as the internal bargaining of universities' own decision making processes can make them and that there is not administrative waste resulting from excess funds under some budget heads with no possibilities of transfer.

Academic membership of the UGC, no government involvement with individual universities, block recurrent grant distributed according to criteria that are not explicit, these are the remaining features of the UGC buffer which protect universities from overt political intervention in their financial affairs.

There is, however, a new device imposed on universities which seems to offer an additional protection for the future which although not welcomed is in fact very similar to that which the Independent University is claiming as a matter of principle. This was the decision to raise student fees from 1977/8 onwards to comprise more than 20 per cent rather than 5 per cent of total university income. In general the increase was not welcomed (CVCP 1977b).

It is difficult to say whether the decision was taken on grounds of political expediency or of principle. The Robbins Committee advocated a raising of fees on the grounds that a diversity of sources of income was the best guarantee of university freedom against state domination. Even where, as in Britain, the great majority of fees of home students are paid out of public funds, the mechanism by which they are paid is completely different from that which determines the UGC subsidy to institutions. The second argument in favour of universities receiving a substantial proportion of their income in the form of fees which has been prominent in the economics literature, is that it will make them more responsive to the wishes of their customers, the students. It is too soon to be able to assess the extent to which this is so but the competition between institutions of higher education for students appears to have become more intense, in the past two years, and many universities and polytechnics are showing signs of an increasing awareness of the need to 'market' themselves.

However, there is good reason to believe that the decision to raise fees was taken on grounds of political expediency. Since 1967 recurrent grants to universities have assumed that the fees paid by students from overseas would be substantially higher than those of British students. With one or two notable exceptions, all universities felt reluctantly obliged to accept this distinction, but it was extremely unpopular and has provided a focus for political unrest amongst students. The theoretical justification for the differential fee is that the value of the services provided and the net benefits which will be subsequently removed abroad were much higher than the fee and there seemed no politically compelling reason why the British tax-payer should be asked to subsidise these benefits in an indiscriminate way. (There are, of course, government scholarships available for many students from the developing world.)

The raising of fees for all students dealt with the apparent discrimination in a very neat way. Most British students have their fees paid out of public funds anyway, so the decision caused no hardship or discrimination amongst poorer students amongst them. Self-financing postgraduate students are the one significant exception to this rule, but the government has already made it known, (e.g. White Paper, 1972) that it considers postgraduate education over-expanded; so the discriminatory effects in this area may be no more undesirable from a public policy point of view than the discouragement to overseas students.

Quite apart from this discriminatory effect against some categories of students, the raising of fees to levels where they constitute a significant proportion of total university income, has created anxiety amongst university administrators and planners, who fear that stagnating demand for higher education could leave them in the situation where enrollments at the beginning of an academic year are such that they are unable to meet all their financial commitments, during the year. This is an entirely new situation for British universities over half of which have never known a period in which the great

majority of their recurrent income was not guaranteed for five-year periods, with the near certainty that it would be increased in the following quinquennium.

It raises the question of whether in all the debate about university financing during the past three-quarters of a century, 'institutional autonomy' and 'academic freedom' have really been euphemisms for 'absolute financial security'. For the first time since 1945, and to a substantial degree for the first time since 1919, British universities are in the position of competing in the market place. The remaining two decades of the century promise to be as eventful as were the previous two.

A Proposal for Further Change

The decision to raise student fees substantially, will change considerably the pattern of university finance and the likely university attitude to the recruitment of students. The other main component of university income is "payments for research and services rendered." In 1973/4 these comprised just over 13 per cent of the total. The Robbins Committee welcomed this additional form of finance as part of its general belief in the advantages of a diversity of financial sources. There is, however, another reason for increasing this source of finance. Universities exist to teach and to undertake scholarship and research. The UGC block grant system which was supposed to cover both research and teaching activities of staff, guaranteed institutional autonomy and successfully stimulated rapid expansion but ran the risk of encouraging institutions and individuals to behave like Adam Smith's Oxford professors. Now that the government has, through its policy on fees, in effect established a mechanism of finance which to a substantial degree rewards universities directly for the amount of teaching they offer, it is tempting to suggest that the same should be done for research grants. Just as a substantial part of government finance of universities has been shifted from block grants to institutions to subsidised fees for students, so there is a strong case for shifting some further funds away from block grants towards the Research Councils which have a responsibility for financing specific research undertakings. Universities would thus be rewarded directly for the research of members of their staff. Just as those universities which are most successful in attracting students will benefit under the new fee arrangements, so those which are most successful in attracting research funds would benefit under this proposal. It is very probable that the decline in the birth rate by about 30 per cent between 1965 and 1975 will begin to affect university enrollments from about 1984 onwards. The channelling of public funds in accordance with externally perceived performance in teaching and research may be a more efficient and more socially equitable way of deciding which institutions will prosper and which decline in a period of stagnating overall demand by students than a block grant system which treats all institutions in some sense equally, through the operation of a not very well defined formula modified on the basis of not very explicit criteria. There are notoriously difficult problems in defining and measuring university 'outputs'. They are probably insuperable. However, payment for 'research' and payment for 'students' come nearer to paying directly for 'output' than direct subsidy of institutions.

The optimal proportions of income to be derived from the three sources, fees, payments for research, block grants, are not easy to

determine but it is tempting to propose as a starting point that university income should derive 50 per cent from block grant and 25 per cent each from fees and direct payment for research. All universities would then, in effect, have substantial guaranteed income from public sources for up to five years ahead, but their survival would depend on their success in attracting students and/or research grants. Such a proposal will not be universally popular in British universities but it is very close to the financial proposals which were made by the Robbins Committee.

It will encourage some universities at least to meet the challenges of the 1980's in a positive way, rather than accepting the very real possibility of a general decline. Above all it will help to promote diversity. And if there is one characteristic in which the British system is markedly deficient in comparison with the United States it is diversity.

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COMMENT

Harold Noah

Gareth Williams has traced informatively the rise and fall of a system in university financing that I think has exemplified a pragmatism that transcends muddling through and has become a systematic approach to the solution of a number of endemic problems. The paper raised three major, important points for our consideration on the basis of a case study of the British system.

Firstly, how to provide public funding without public direction of institutional policy and individual professorial work. It outlined a paradigm of three approaches, two at extremes and then one more or less in the middle. We have a very detailed and thoughtful treatment of the particular British solution over the last six, seven, eight decades of increasing state subventions via the university grants committee as a buffer and the data that Professor Williams provides shows that between 1889 and 1974 the nominal money increase was going on at the rate of 12% per annum averaged over the whole period, that is doubling every six years and it seems to me a kind of tree that did virtually grow to the sky in spite of everything we say about these kinds of rates of increase.

So it was a very powerful mechanism for making possible and negotiating fantastically sustained increases in expenditure. The paper underlines the importance of a quinquennial review by "independent" treasury committee than by a really independent committee reporting through the treasury and then reporting through the central government's education authorities, making block grants to universities on a secret formula.

And we then had an excellent analysis of the impact of the growth of public involvement, of the impact of decline in levels of wealth and resources available in the public sector relative to demands on those resources and of the impact of inflation on the system to the extent that it is at least suspended and perhaps may even be permanently dead in many of its essentials. Now why was it so successful and why did it collapse? That's the essential material stuff of this paper and some excellent reasons have been provided and are detailed in the paper that has been given us by Professor Williams. I'd underline one or two. Perhaps they are additions, perhaps they are underlinings. In his talk, Professor Williams has emphasized the extent to which the university sector really is quite small in England and has typically been quite small in England. That, I think, does not come through so strongly in the written document. For example, until the expansion of the 60's university sector took in something like between

3 and 5% of the relevant age group and thus was really a kind of a miniscule sector to deal with. There were, of course, substantial numbers of 18, 19, and 20 year old's in higher education as it would be defined in a number of countries, especially this country, but they were not called universities and they did not come under UGC system. So it was in a sense very manageable, and then the 60's saw the great explosion of numbers. Accompanying that in Britain was a very large measure of agreement about what universities were, what they ought to do, what their social function was as well as the way in which they should be run. The curriculum operated across the university system, according to fairly commonly agreed criteria of what excellence and relevance constituted. The whole system incorporated a degree of often unexpressed but nevertheless real consensus concerning what university education was about. And in that kind of situation one does not need too many overt controls. The masters of the universities were doing very much what, first of all they all agreed about so there was not a lot of internal conflict to attract state intervention. Particularly what they were doing was very much in agreement with what the masters sitting in the treasury thought they should be doing.

Thirdly, and perhaps this is a more contentious point and could be subject to more dispute, I would have thought that during these halcyon days at the UGC the staffing in the universities was much more socially and culturally homogenous than it is today and although there was no doubt a great assimilation and cooptation of staff from working class and lower middle class groups there was also a kind of intellectual cooptation of these people to a much great extent than there is today so that having attained the position as university lecturers, readers, professors and so on these people tended much more to adopt the outlooks and goals of their social superiors who had appointed them. They were coopted in a sense in a more fundamental way in those days.

Now, all that's changed in modern Britain, to a remarkable extent. And there's been tremendous quantitative expansion, certainly not to the levels of the U.S., but nevertheless to really remarkable levels considering the low base from which it had all come. The expansion, of course, has been very much outside what was formally called the university sector but nevertheless is now recognized to be legitimate higher education. The expansion has not only gone on in student numbers and staff numbers but also in levels of real cost so that university employees particularly the lower instructional levels are not expected to live at such standards of genteel though respectable poverty that were considered reasonable in the post-second World War period and before. So the costs have risen tremendously both on a gross basis and on a unit cost basis. There has certainly been a break-down of the consensus concerning what university and higher education are all about; there are new subject areas; there are universities in new places that would formally have been considered quite inappropriate to locate universities. There is also this vigorous competition now, often, as Professor Williams points out in his paper, sustained by the authorities from a parallel higher education system like the technical universities and colleges of advanced technology. Added to which there is the enormous increase in social heterogeneity of the students' side but particularly on the staffing side. Thus it seems to me that it previously could have been regarded as the nice cosy operation of a club in which everybody knew the rules and the rules really did not have to be stated too clearly. In fact if you stated

the rules too clearly it was quite evident that you were not a proper member of the club because the rules ought to be part of your psyche and so on whereas in Germany in Japan, let's say, the model would have been one of a paternalistic state bureaucracy.

In this country perhaps a simple model would have been one of a business corporation for university organization -- the whole club approach has come under such tremendous strain in Britain that Professor Williams is in fact reporting on the breakdown of one of its very important expression and elements in the past. The basis of trust, in a sense, has largely evaporated. Accountability became the norm and the slogan continues to be a norm and a slogan. Insofar as Britain's difficulties economically remain present in spite of the oil wealth, we shall see continued strain of this kind in the attempt to replace a club approach by some other approach more suitable to the present period. Professor Williams quite rightly points out that much of the debate superficially was conducted in terms of protection of institutional freedom and academic tenure in particular.

It is interesting to see if I can try to put it in some of our own perspective that what's happening here is that we're seeing a lot of the attacks on academic freedom and tenure coming from within our institutions where the professoriat or elements in the professoriat here are saying to their administrations and to their colleagues "you no longer deserve tenure, you no longer deserve protection, you're not doing the kinds of things that will make our institution viable and you jolly well ought to change what you're doing or get out of here." Now although there are in a sense few instances of formal votes being taken along these lines, there are many informal expressions of such opinion and one of the problems, that we'll have to face here no doubt, will have to be faced in England is the problem of ways in which the individual professor whose subject or style happens to have gone out of fashion can be protected from the rhetoric if not the action of his colleagues who are more concerned with protecting their jobs, their annual increments or perhaps the viability of their institutions. If you want to raise it a little bit above completely selfish notions, how can we protect that right to continue activity against those attacks? And in a sense it's ironic that just as we have built our bulwarks firmly against the external political authority or the mean minded business man or the raving local populace who does not see why it should support a particular institution, we see the rise of attacks from within.

I can't forbear two minor points that came up in your discussion. I am intrigued about the Dutch example of clocking-in because I suspect that what would happen in this country may very well happen in Holland if the minister persists in his stupidity is that the academic staff will say "well, okay, we'll accept the clocking in but that means we don't have to work after five o'clock and we certainly don't work before eight fifteen and if we do we want overtime" and that would be a very interesting tu quo que which would probably leave them after bargaining session better off than they are at the moment and the minister worse off. And just one last point, again, very minor, but I think it's interesting. It seems to me, as you mentioned Adam Smith and the Scottish universities and his feeling and my feeling that they were probably superior in the 18th century to Oxford and Cambridge, almost anything would have been superior to Oxford and Cambridge in those days; it wasn't the Scottish universities, I think, that so much powered the industrial revolution and the mechanical preeminence of Britain at the time so much as the dissenting academies and the

and the mechanics institutes which were of course fee paying and which did have a great deal in common perhaps with Beloff's institution and indeed there is a great lesson for us here that, as you quite properly point out, and perhaps I'm speaking out of great self-interest, especially in this institution, a large degree of independence and reliance on fees while it has great dangers nevertheless can produce flexibility and a willingness to adapt to the needs of clientele that state financed institutions do not have and whatever they do have, they tend to lose over the generations as they come simply to expect to sup at the public trough, come what may.

COMMENT

Estelle James

I read with great interest Gareth Williams' paper on the British system of financing higher education. I was struck by the problems we share in common and also by the contrasts between their system and ours, and my comments shall touch on both aspects. On the whole, I think the similarities are probably greater than the differences.

I must start by admitting to strong feelings of envy as I read about the 5-year non-earmarked block grants received by universities in Great Britain until recently. It is unfortunate, in my opinion, that the concept of long-term grants has now been discarded. The principle of non-earmarking, however, apparently continues, and for that you should be grateful.

These two features are absent from the American system of financing public higher education, at least, as experienced in S.U.N.Y. and, I believe, in C.U.N.Y. as well. First of all, our budgets are appropriated on an annual basis, according to the state's fiscal year, which starts on April 1, and often we do not know what next year's budget will be until March 31. Obviously, this limits our ability to plan rationally and coherently, especially since the academic labor market operates most actively and faculty often make their locational decisions during February and March.

This uncertainty could be alleviated considerably if we were allowed to accumulate savings in good years as a buffer for bad years in which the budget turned out to be less than anticipated. However, this method of reducing uncertainty is ruled out by a second shortcoming of our system, the fact that all unspent dollars evaporate on April 1. Thus, buffers cannot be accumulated out of public funds, a huge penalty is attached to leftover monies, and a flurry of spending often occurs in March, even if the funds could be put to better use the following September.

Thirdly, we apparently suffer from a greater earmarking of funds than do universities in Great Britain. It is true that each institution still has considerable choice and autonomy concerning the internal allocation of resources. However, the state sets many constraints for us besides a dollar constraint. We have, in addition, an FTE constraint, an a priori division of resources by type of factor (for example, faculty dollars are not the same as xerox dollars or computer dollars) and by major purpose (for example, I & DR versus general administration). As any student in introductory economics will tell you, these additional constraints make it impossible for us to spend our dollars in a way which maximizes institutional utility or

productivity. Moreover, we often do not know ahead of time which constraint will turn out to be the effective one. Will we use up our faculty lines before we use up our dollars, or vice-versa? Sometimes we guess wrong, therefore economize on the wrong factor and end up with a surplus which could have been used much more productively if the decision process were not so complex.

Added to all of this is another phenomenon we have all grown accustomed to in recent years here and to a lesser extent, in Great Britain -- the freeze. When a freeze on new hiring suddenly materializes, or when special restrictions (such as a ban on out-of-state travel) are imposed, none of the constraints may be operative and we may close the year with a surplus in all fiscal accounts. Of course, that is precisely the object of a freeze. While it accomplishes its object very firmly and quickly, the costs are often distributed in a capricious non-optimal way. Furthermore, the state and the university use up a lot of resources simply to monitor freezes, to implement restrictions, etc. Surely, there must be a better way to achieve the same goal.*

The non-monetary constraints and the freeze are used partially for political-public relations reasons. The politicians may not simply want to reduce the budget and maximize educational quality subject to that tighter constraint. They may want to be able to say, "We have cut the number of employees, but we have not fired a single person," whether or not this is best for the educational enterprise. Thus, in our system we have not totally escaped a clash between educational and political objectives. I wonder if you would call this a subtle infringement on academic freedom?

The inefficiencies I have just described in our public sector are probably present to a much lesser degree in the private sector. There, institutions (particularly the wealthier ones) can plan on a long-term basis, can use endowments as a buffer, and can determine their own earmarking of funds, subject, of course, to an ever-present dollar constraint. This suggests that private colleges and universities can derive greater educational benefits from a given number of dollars than can we in the public sector. British universities seem to be somewhere in-between.

Let me move on now to discuss some of the issues that arise in both systems. First of all, when the state is determining the budget for its colleges and universities, should it take into account average or marginal cost and if marginal cost, how is this calculated? The UGC apparently uses marginal cost but derives this from cross-sectional analysis which does not necessarily tell us the marginal cost through time at a particular institution. Here, unit cost funding is more usual. However, we know that marginal cost may be

*This very cumbersome method of public finance of higher education necessarily shifts decision-making power from faculty to administration. Administrators are in a better position to keep track of the detailed regulations, to know what will and will not be approved by the state's fiscal authorities. They thus control a very important flow of information and information, we know, means power. Administrators can "pass the buck" to Albany for unpopular decisions, can screen out undesired options, can push harder for projects they favor, etc. It would be interesting to study this impact on the locus of decision-making power here and to compare it with the British situation.

different from average for the institution as a whole if there are economies or diseconomies of scale or if the new student mix is different from the old. Suppose, for example, that some departments have excess capacity with a zero marginal cost while others are heavily subscribed; this situation can arise because of the tenure system which converts faculty labor into a fixed rather than a variable factor of production. For the former group of departments, marginal costs may be much less than average but for the latter the opposite may be true. To the extent that new students flow into fields with a faculty surplus, marginal costs for the institution as a whole may be lower than average. The current reimposition of curricular requirements at many American universities, often increasing the number of required courses in foreign languages and history, both of which have excess capacity, is seen to have a firm economic basis. When total resources are constant or contracting, and labor is a fixed input, demand must adjust to supply rather than vice-versa. The costs of free student choice and frequent taste change may be too great for the system to afford.

This discussion is closely related to another question: should the government provide differential funding by level of student and type of discipline? Apparently, Great Britain takes these differences into account; New York, until now, has not. On the one hand, differential funding simply seems to recognize the obvious -- that student mix affects costs and total costs may change even if aggregate enrollment remains constant, because the fields and levels taught are changing. On the other hand, I worry that once student mix enters into the formula for state funding, so too will state control over that student mix, and I am not sure whether, on balance, we will be better or worse off.

On a conceptual level we might ask, too, whether the state's allocation should reflect the social benefits derived from different levels and fields of study, rather than the costs. These two methods of funding might have quite different incentive effects, the latter encouraging the production of high cost educational products as a way of building up the university's budget, and the former rewarding the production of goods which are deemed to have a high value to society. Of course, it is far from clear that the state legislature is the best body to determine social value, but then, the universities themselves may not be either.

This leads me to a fourth issue. Apparently, in Great Britain as well as New York, most university revenues are viewed primarily as a return for teaching. Yet, we also know that, in both systems, research consumes a large proportion of resources, particularly of faculty time. Research, thus, is funded indirectly, almost by the back door. Gareth Williams proposes a more direct method of funding, in which the research potential of an institution could be evaluated and rewarded separately from its teaching potential. I agree that, in theory, this would be desirable, and to some extent this is done in our country, by federal agencies such as NSF and NIH. However, I wonder whether state legislatures would be willing to earmark such huge sums of money for research, which often is basic in nature, with outcomes uncertain, long term and likely to benefit non-residents as well as residents. Frankly, I doubt it. The current method of funding research, then, may be the only practical way in state universities; and is justified only by the assumption that faculties know better than others which educational products are in the public interest.

Finally, let me draw attention to one more problem we seem to share in common with Great Britain, the difficulties raised by local versus central government financing. In England, the universities are nationally financed while the polytechnics are local. Here, public universities are state financed while community colleges often have a strong local base. Both of us, then, must contend with questions of preference to residents of the unit providing the funding. The question is more acute here because we have no national system of higher education. Undergraduates cannot choose freely among all public universities but instead are restricted to the ones in their own state (or must pay a much higher tuition fee elsewhere). Clearly, this is non-optimal since it does not allow students to choose the best institution for them, even when they are otherwise admissible. A California and New York student might each be better off in the other person's institution and might meet the necessary academic standards, but cannot make the switch. On the other hand, if some preference for state residents were not guaranteed, taxpayers might be unwilling to bear the burden of higher education costs. Perhaps the best way out of this dilemma would be to negotiate reciprocal agreements in which mutual trading of students was permissible and, indeed, encouraged. I would be interested in knowing more about how England has solved this problem, with regard to its polytechnics. Obviously, we have a lot to learn by comparing notes about our respective methods of financing public higher education.

HIGHER EDUCATION AND EMPLOYMENT
IN THE FEDERAL REPUBLIC OF GERMANY:
Trends and Changing Research Approaches
from the Comparative Point of View

Ulrich Teichler

1. Introduction*

Every description of the relationship that exists in a given country between higher education and employment is in large measure colored by the research preoccupations prevailing there in the area under investigation. Upon occasion, attempts made to isolate and compare "significant" data about the relationship between higher education and employment in various countries run up against the difficulty that in a given country, there may be a vast amount of information available on one subject yet on another, little or none. Any report on the social situation prevailing in a given country is thus to some extent a report on that country's research, as well.

On the other hand, no description of a country's research efforts -- here, the relationship between higher education and employment¹ -- would be comprehensible if it failed to take social realities, cultural traditions, and the prevailing political issues and debates into consideration. There is no way of understanding the relative emphasis research in a given country places on manpower requirement forecasts, surveys on education and income, social origin and educational/occupational career,² for instance, unless at the same time attention is drawn to the typical characteristics of that country's higher education, occupation structure, education and social policy, etc. Thus, any description of a given country's research effort in the social sciences is, to some extent, a description of its social situation.

It would certainly be wrong to insist on a simple correspondence between the actual social and economic situation and research approaches in each country. First, one can argue against such an assumption with the finding, which I shall discuss later, that research in one country is not completely centered on the particular characteristics. For example, some of these characteristics tend to be taken for granted to such an extent that they hardly figure in research.

Secondly, it can be observed that the data and focal points of research do not differ from country to country to the extent one might expect taking into account the different actual situation. There are common focal points of research internationally. Moreover, there is in every country a certain measure of research which lies

outside the mainstream of approaches,

Furthermore, factors other than the actual situation seem to be responsible for the fact that research is concentrated on particular questions. One can in this context cite the example of the inner dynamics of research paradigms as they are discussed in the philosophy of science. Technical difficulties such as the gathering of data can result in the neglect of many important problems. The political influence on research funding contributes in every country to the fact that the choice of research topics is strongly influenced by political moods. Finally, the various scientific disciplines which are involved with research in the area -- in varying degrees, of course -- tend to focus on certain questions which conform to the respective research tradition; thus the organization of research has a significance which should not be underestimated for the state of knowledge on a particular topic in each country.

No attempt will be made here to analyse comprehensively the various conditioning factors of the perception of the relationships between higher education and employment. At any rate, a person involved in research in that field would lack the distance necessary to conduct such a study.

We are concerned in this paper with the interdependence between the nexus higher education -- employment in its social reality on the one hand, and research in the field, on the other. The development of this relationship will be illustrated by reference to recent research conducted in the Federal Republic of Germany; the focal points of such research will be shown in the social context; and we shall discuss the broad significance of this interdependence.

The comparative standpoint is of service, to begin with, when we set out to depict the particular characteristics of West Germany social reality and research. Peculiarities can only be perceived as such when they are seen in relation to the situation in other countries; the implicit contrast we shall be making in this paper is between West Germany and, for the most part, the United States. Above and beyond this, the comparative point of view is fundamental to the intention of this paper in respect to the part I would like it to play in the debate on research policy. I strongly feel that one would be in a better position to understand the fundamental problems connected with the relationship between higher education and employment -- and this applies to every country, in its specific situation -- if one would cease to cling as rigidly as in the past to the political preoccupations and research paradigms prevailing in one's own society.

2. The Post-War Development of Higher Education and Employment

Before we go into detail on actual developments and research, it would be useful to bear in mind the following basic information on the post-war development of higher education in the Federal Republic of Germany and of the relationship that exists between higher education and the occupation system.³

Taking as a basis the present-day definition of higher education,⁴ we can say that the number of students enrolled in such institutions has quadrupled in the last two and half decades, from a figure of around 170,000 in 1950 to 877,000 in 1976 (cf. Table 1). In addition, the proportion of college and university students in a given age group has grown from between 4 and 5% to almost 20%. Similarly, the share of public expenditures for higher education and research has quadrupled, rising from about .5% to about 2% of the GNP.

Table 1

Enrollment in Institutions of Higher Education in the Federal Republic of Germany

Institutions	Number of Students			
	1950	1960	1970	1976
Universities	116,900	206,100	330,100	656,000
Comprehensive Universities	-	-	-	49,000
Teacher Training Colleges	11,400	32,300		***
Other Institutions	5,400	8,500	10,900	15,300
Technical and Vocational Colleges*	40,000**	44,200	87,500	157,100
Total	170,000**	291,100	510,500	877,300

Source: Bundesministerium für Bildung und Wissenschaft.

*including forerunner-institutions; in 1971, the Fachhochschulen were officially recognized as institutions of higher education.

**Estimates.

***Included in "universities".

Contrary to estimates at the beginning of the Seventies, the proportion of freshmen in the corresponding age group has ceased to climb since around 1972. According to calculations made by the West German Ministry for Science and Education, this figure was 18.8% in 1972 and only 19.1% in 1976.⁵ More recently, the increase in the absolute number of university students has been due in particular to an increase in the average length of study, and is expected to persist over the next few years as a result of demographic factors.

In West Germany, the proportion of university students in the relevant age groups is at present not particularly high by international comparison. It should be borne in mind, however, that the period of schooling and study up to graduation is especially long in that country. Thirteen years of schooling are required before entry into universities, and a course of study lasts, on average, seven years. Technical and vocational colleges (Fachhochschulen) require twelve years of school before admission, and the course of study runs for an average of three and a half years.⁶ Finally, many courses of study which in the United States are carried on in colleges are concentrated in West Germany in the vocational schools.

Expansion in West Germany has been accompanied and influenced by changes in the structure of secondary and higher education. A certain category of engineering and other higher vocational schools were upgraded in 1971 to the status of Fachhochschule, which transformed them formally into institutions of higher education. Though the vertical structure of secondary education, with an academic track

(Gymnasium) an intermediate track (Realschule) and a main track (Hauptschule), was not abolished, access to higher education was made easier by several measures such as the institution of an "orientation level" (Orientierungsstufe), encompassing the fifth and sixth grades; furthermore, by the establishment of around 200 comprehensive schools; the creation of various "second routes" to the Abitur certificate; and finally, by the establishment of vocational high schools (Fachoberschulen), whose graduates are qualified for study at the technical and vocational colleges.⁷ Thus, of the school leavers who in 1975 were entitled to enter one of the institutions of higher education, only 62% had attended a Gymnasium,⁸ also around a third of all college and university graduates could already look back on a longer period of occupational experience.

Of the total West Germany labor force in 1950, only around 2% had taken a degree at a university-level institution (university, teacher training college, etc.); by 1961 this figure had risen to 2.9% and in 1970 to 3.8%. To the 1970 figure one must add a further 1.5% -- persons who had graduated from the forerunners of what were to become recognized as short-cycle institutions. It is assumed that the proportion of persons holding college degrees will rise from between 6 and 7% today⁹ to around 11% by 1990.¹⁰ -- It also ought to be noted that, according to the 1970 census data, 1.8% of the labor force has the Abitur certificate and no further college degree; it can be assumed that the majority of them are college drop-outs.¹¹

The data from the censuses of 1961 and 1970 are taken as indicators of the fact that the 39% increase over this period in the number of persons who had acquired a university degree had not led to any substantial changes in occupational perspectives, more than half of their number were employed in public institutions (cf. Tables 2 and 3). One can also assume that the number of job offerings considered adequate to meet the expectations of university graduates in 1960 was in the Sixties increased by an amount sufficient to provide new graduates with equivalent employment opportunities.

Various sources of information -- data on the placement activities of the public employment service, advertisements of job offerings, public statements by employers, etc. -- allow one to conclude that since the mid-seventies a conspicuous proportion of university graduates has assumed types of employment previously considered the preserve of non-graduates. This development has attracted considerable attention not least because the increased unemployment quota in the past few years tends to serve as an impediment to this sort of substitution process.

Statistical inquiries carried out by the public employment service indicate that the rate of unemployment has, on yearly average, exceeded 4% since 1975, whereby the higher the educational level, the lower the unemployed quota is. This continues to hold true, if one compares recent graduates with the labor force as a whole, or the private with the public sector of employment.¹² As is shown in Table 4, the advantage enjoyed by graduates from institutions of higher education appears to diminish in the presence of a continued high rate of unemployment and growing numbers of university graduates. Unemployment among teachers, is increasing, in particular. All in all, one can conclude that the problem of unemployment among university graduates has tended to be expressed for the most part in a prolonged search for employment after graduation, and that truly long-lasting unemployment is a rarity. Such factors as the increase in the number of students over the past few years and the growing numbers of

Table 2

Employed University Graduates by Occupational Group in 1961 and 1970 - Census Data

Occupation	1961 No. of Employed Graduates (in 1,000)	Per- centage	% of Labor Force in Corres- ponding Group	1970 No. of Employed Graduates (in 1,000)	Per- centage	% of Labor Force in Corres- ponding Group	Per- centage Change 1970: 1961
<u>Person-related and community-related services</u>	550.2	67.6	33.1	753.5	70.5	30.6	+ 45
Legal occupations	49.9	6.4	75.6	56.6	5.3	77.7	+ 8
Arts, communication and related occupations	22.9	3.0	13.5	31.7	3.0	15.3	+ 38
Health occupations	130.4	16.9	28.5	162.6	15.2	27.0	+ 25
Education occupations	270.3	35.1	85.2	416.2	38.9	90.7	+ 54
Clergy	35.3	4.6	52.5	35.4	3.3	69.3	+ 0.3
Other arts and science occupations	8.5	1.1	74.7	38.7	3.6	100.0	+ 355
Others	3.9	0.5	0.8	12.3	1.2	1.2	.
<u>Distributing, administrative, and planning occupations</u>	222.8	28.9	3.3	269.7	25.2	3.3	+ 21
Sales and clerical occupations	51.0	6.6	1.0	82.5	7.7	1.3	+ 62
Entrepreneurs, business occupations	42.8	5.6	9.9	41.3	3.9	11.2	- 4
Political and administrative occupations	30.8	4.0	12.3	37.4	3.5	13.7	+ 21
Scientific and technical occupations	98.8	12.7	11.6	108.5	10.1	9.1	+ 11
Other occupations	27.0	3.5	0.1	45.5	4.3	0.3	+ 69
Total	770.0	100	2.9	1,068.7	100	4.3	+ 39

Source: K. Parmentier and M. Tessaring, "Bildungswesen und Arbeitsmarkt für Hochqualifizierte: Eine Übersicht," Arbeitsgruppen des Instituts für Arbeitsmarkt- und Berufsforschung und des Max-Planck-Institute für Bildungsforschung, eds., Bedarfsprognostische Forschung in der Diskussion, Frankfurt: Aspekte, 1976, p. 255.

Table 3

Employed University Graduates by Major Economic Sector in 1961 and 1970 - Census Data

Economic Sector	1961 No. of Employed Graduates (in 1,000)	Per- centage	% of Labor Force in Corres- ponding Sector	1970 No. of Employed Graduates (in 1,000)	Per- centage	% of Labor Force in Corres- ponding Sector	Perce- ntage Change 1970: 1961
<u>Private Sector</u>	213.6	27.7	1.0	299.6	28.0	1.6	+ 40
Agriculture, forestry	6.1	0.8	0.2	6.2	0.6	0.3	+ 2
Production	103.0	13.1	0.8	146.4	13.7	1.8	+ 45
Trade	38.8	5.0	1.2	51.4	4.8	1.6	+ 33
Finance	12.3	1.6	2.7	19.9	1.9	3.0	+ 61
Real estate and miscellaneous private profes- sional services	49.9	6.5	14.4	65.6	6.1	13.6	+ 31
Other private services	5.5	0.7	0.4	10.1	0.9	0.8	+ 84
<u>Predominantly Public Sector</u>	555.1	72.1	10.6	769.1	72.0	14.1	+ 39
Electricity, water, mining	7.7	1.0	1.0	8.1	0.8	1.6	+ 6
Transportation and communication	8.0	1.0	0.5	11.2	1.0	0.8	+ 40
Science, education, arts, journalism	303.8	39.5	42.6	465.7	43.6	49.3	+ 53
Health services	107.3	13.9	17.8	131.7	12.3	17.7	+ 23
Non-profit organizations and private households	44.5	5.8	8.5	47.7	4.5	14.4	+ 7
Government and social security	83.8	10.9	5.7	104.7	9.8	5.0	+ 25
No response	1.3	0.2	-	-	-	-	-
Total	770.0	100	2.9	1,068.7	100	4.3	+ 39.4

Source: K. Parmentier and M. Tessaring, op. cit., p. 257.

Table 4
Unemployment of Highly Qualified Manpower

Month/	Unemployed Graduates of Universities		of short-cycle institutions		Number of employed recent university graduates	Number of unemployed teachers	Unemployment quota of total labor force
	No. of unemployed graduates	percentage of grad.	No. of unemployed graduates	percentage of grad.			
9/73	5,517	0.6	4,566	0.9	1,741	753	1.0
5/74	7,586	0.8	6,311	1.2	.	967	2.0
9/74	9,618	1.0	10,264	2.0	.	.	2.4
5/75	13,131	1.4	12,139	2.2	.	1,904	4.4
9/75	15,491	1.7	14,917	2.6	5,200	2,623	4.4
5/76	18,408	1.9	14,392	2.5	.	3,200	4.2
9/76	20,336	2.1	16,505	2.8	6,300	3,900	3.9
5/77	24,700	2.4	.	.	9,679	7,100	4.1

Source: Data collected and published by Bundesanstalt für Arbeit.

non-graduate white collar workers who are unemployed do however strengthen the tendency to make negative prognoses on the future market for college graduates.

3. State Institutions and Public Responsibility for the Quantitative Development of Higher Education

One characteristic of higher education in West Germany has far-reaching consequences: the fact that it is for the most part a public concern -- that means under State and Federal control. 98% of all students are enrolled in public institutions. The remaining 2% is distributed among a handful of parochial colleges and private technical colleges, which for the most part are financed by public funds, as well. Furthermore, German students have no college fees to pay. Finally, over half of all college graduates have found employment in public administration, the almost exclusively state-controlled education system or in those professions over which state planning and regulatory activities have considerable influence.

This leaves government with a heavy responsibility for the quantitative development of higher education: among other things, in setting priorities with regard to public funding (here: higher education in relation to other social services); in opening up opportunities for broader participation in higher education; in providing the labor market with highly qualified manpower; in providing training for a new generation of public employees; and in bearing responsibility for scientific development.

The quadrupling of both student numbers and -- measured against the GNP -- the share of public expenditures for higher education and research in the years from 1950 to the present have been accompanied by

unceasing debate on the priorities to be set in societal policy in advance of government expenditures as well as on the requirement for highly qualified manpower.¹³

Thus it is not surprising that manpower requirements forecasts have been produced in relatively large number. We can isolate three phases in this development.¹⁴

It was in the early Sixties that the first -- at that time still fairly global -- manpower requirement studies utilizing international comparison, trend extrapolation and plausibility inference, were made and published in West Germany. This contributed to the spread of the belief that over the long run it would be necessary to expand college-preparatory and higher education to a considerable extent if the country's economy was to remain internationally competitive. The number of students projected by these studies or estimated as demand was considerably lower than the figure that actually resulted.

When, toward the end of the Sixties, both public opinion and government agencies overwhelmingly came out in favor of a stronger expansion of higher education facilities in order to secure economic growth and guarantee the citizen's right to education, a series of prognoses were produced which were based on the methodologically more stringent manpower requirements approach. The best known of these, carried out by Hajo Riese under commission by the Science Council (Wissenschaftsrat), came to the conclusion that the number of students was growing at a far faster rate than requirements; indeed, it was predicted that by 1980 there would be around twice as many graduates as job openings for people with their qualifications.¹⁵

Although employers at this time never ceased to warn of the danger of an "academic proletariat" developing, the general political tendency was to let the quantitative development of higher education be determined predominantly by "social" demand. Under these circumstances, theoretical and methodological criticism of the manpower requirements approach¹⁶ fell on receptive ears. Thus, these forecasts had little or no impact on political decisions.

Two circumstances prompted a new wave of manpower requirement forecasts in the present decade. To begin with, the government refused to expand capacity in all university departments to meet individual demand; selective admissions (numerus clausus) came to be practiced particularly in departments where the unit costs are high, such as medicine and dentistry. When the constitutional guarantee that all citizens have "freedom of choice in occupation, work-place and education" was understood to mean that every qualified person has the right to study the subject of his choice at the institution of his choice, the numerus clausus issue was brought before the Federal Constitutional Court. In 1972 this court determined that university expansion must be oriented primarily toward social demand while making allowance for constraints on appropriations as well as for manpower requirements, as far as these can be clearly determined.¹⁷ The government felt compelled to commission an unprecedented number of requirement forecasts, since restricted admission seemed justified only if additional expenditures for higher education should threaten other social services or cause intolerable friction on the labor market. The second circumstance is the slow-down in economic growth since 1973, which has caused growing concern about future prospects for college graduates.

A survey published in 1976 lists 23 studies published between 1973 and 1976 on the demand for highly qualified manpower.¹⁸ These studies have sought to overcome some of the shortcomings of previous prognoses. Among other things, they explicitly proceed from various political

objectives. Furthermore, they take developments on other educational levels and in a broad spectrum of occupations into consideration and include substitution processes as a factor in their prognoses.¹⁹

It is doubtful whether these studies have been of any substantial help in government planning on higher education or whether they have been able to make such planning more sophisticated. For the more complex the models became, the harder it has been for them to produce results that can serve as legitimization for specific political decisions. On the other hand, it has become exceedingly difficult to judge the extent to which the resulting data are determined by the complex assumptions on which this model is based. On the other hand, reference to substitution processes and alternative policies has the effect of passing the buck back to the planners.

Such prognoses range on the one extreme from methodologically questionable studies undertaken by private and public employers, according to which in future there will be a 65% oversupply of college graduates who, at best, will not be able to count on "appropriate" employment, to the other extreme, represented by models which assume that the growing number of college graduates will not lead to any notable friction on the labor market.²⁰ The fact that in comparison to other type of studies on the relationship between higher education and employment there has been such an incredible glut of requirement forecasts can only be attributed to the great influence government has on the quantitative development of higher education.

A further consequence of this government influence is the immense quantity of literature available on the topic of political decision making and planning with regard to the relationship between the educational and the occupational systems.

In addition to the many descriptive studies on the institutions involved, political programs and the like, there is a remarkable volume of analyses which seek to determine the socio-economic factors that have an effect on government action. Their discussion of social theories and empirical evidence revolves around questions as to the extent to which qualifications requirements or the social selection of education determine policy as well as to the impact the power structure has on political decision making.²¹ We shall discuss a few examples of this in the following chapter.

Yet another consequence of government's strong influence in this sector is seen in the political controversies that rage over the question of the legitimacy of planning decisions, a question that finds considerable resonance in the work of scholars in the fields of law, political science and sociology, as well. The focal point is the problem of admission to higher education, which is critical to the quantitative limitation on participation in higher education together with the provision of highly qualified manpower as well as to the criteria for individual advancement in society.²²

As the debate over the Bakke case in particular has shown, people in the United States are also increasingly coming to view the question as to which particular mixture of principles -- elitist, meritocratic and egalitarian -- is to govern selection in society as a matter of public concern. In West Germany, however, the question of the legitimacy of admission policies is very much more critical since admissions criteria are and have to be kept uniform, and it is the government's prerogative to determine the underlying principles and, with them, the principles along which quantitative planning for the whole of higher education is carried out.²³

4. The Promotion of Specific Qualifications

The academic as well as the political debate varies in thrust from one country to the other, depending on whether education is seen as a process by which special and distinct qualifications are acquired for application in specific occupations, or whether education is understood as a process by which the student develops a particular overall level of competence and ability. To be sure, in every country the education system has the function of promoting qualification in general as well as providing training in specific skills. It also holds true for all countries that there are considerable differences in the degree to which a course of training is specialized from one field to the other as well as between the various institutions. Nonetheless it appears on balance that the relationship between education and occupation systems in a given country is characterized by one of two relatively clear assumptions: either that specific qualifications lead to particular occupations, or a certain educational level leads to a certain range of occupations.

To illustrate the difference in emphasis between West Germany and the United States: in the United States one may speak of "over-education," or the assumption is that further college education would provide no additional income advantage. In West Germany, it is more likely that the same state of affairs would give rise to fears that the qualifications provided are "wrong" and the person is ill-equipped to carry out his job.

It is perhaps easier to understand the characteristic thrust of argument in West Germany when one bears in mind that practically everyone in that country acquires some sort of vocational or professional training. The graduate from the main track of secondary school goes into an apprenticeship, which is accompanied by part-time vocational schooling -- mandatory even for those who have no apprenticeship. Graduation from the intermediate track leads into advanced training schools. When the college-prep student has his Abitur, on the other hand, he will be likely to have difficulty finding employment, being viewed as occupationally unqualified. Undergraduate study is also relatively specialized in comparison to programs in the United States.

This does not however mean that there is general agreement in Germany that each and every training program is actually or should be geared specifically to a particular occupation; there is considerable controversy about this view in research. The importance of such a view can be measured, however, by the fact that researchers are either inclined to take for granted that education and the training process have a specific occupational orientation or they seek in their investigations to show that the correspondence between education and occupation is much more flexible. In the United States, on the other hand, research on the relationship between higher education and occupation generally takes it for granted that such flexibility exists.

This assumption that there exists a specific correspondence tends to dominate learned debate in West Germany, as the following survey of the main directions of research on the relationship between the education and the occupation systems will show. One article has defined six main directions in research:²⁴

a) The first such approach to meet with wide-spread attention was the human capital theory. This theory dominated discussion on the economics of education up until around 1970. Its basic assumptions stress the importance of qualification for economic growth and were applied -- in the intention of combining analytical and normative

planning procedures -- to prognoses of supply and demand for manpower with various types of qualification as well as to models calculating how a given requirement could be met.²⁵ These prognoses, methodologically constructed along the lines of the manpower requirements approach, were clearly based on limitational models, according to which the current crop of graduates from particular courses of study would find employment in particular occupations -- in other words, the customary slots being the "appropriate" employment for them. Such studies had their empirical basis for the most part in current occupation statistics; as time went on, surveys were employed to determine employers' requirements notions.

b) Criticism of the theoretical, methodological and political implications of the manpower requirements forecasts led to the development of the so-called 'absorption approach'.²⁶ Its focus is on the question: under what conditions can the occupation system absorb growing numbers of graduates, and how would this affect recruitment, occupational structure, the development of occupational roles, etc.? A survey on the employment of graduates in political science conducted by a research group at the Max Planck Institute for Educational Research is generally cited as the strategically most valuable study for this approach.²⁷ It pointed out that there may exist an unanticipated requirement which the manpower requirements approach would systematically overlook. The absorption approach indicated a "relative autonomy" of the education system and a high degree of flexibility on the part of the occupation system in relating the fields of study and occupation.

In this investigation on the employment of graduates in political science and in subsequent studies of graduates in business administration and engineering²⁸ the persons surveyed were asked, among other things, to what extent they are able to apply what they had learned at college, whether they consider their training important prerequisite to their current occupation, what training their predecessor has had or, in the event they themselves had changed employment, what type of training their successor had had and what the ideal training for such a successor would be. As Table 5 shows, many political science graduates have substituted for graduates in other fields as well as for non-graduates, and they see a future in such substitution processes.²⁹

c) Research on substitution processes and the determinants of occupational flexibility -- the third research approach -- has been adapted as the central research program of the Institute for Labor Market and Occupation Research in Nuremberg, affiliated with the public employment agency.³⁰

In the first place, different methodological steps were chosen to measure the labor market's elasticity in adjusting education and occupation. The "latent substitution" cited in Table 6 was measured by questioning employers about the extent to which jobs in their area of responsibility could be carried out by persons having different training and educational level than the person presently employed.

The result was that, for example, 12% of the positions currently held by graduates in economics and social science could equally well be held by graduates in other fields, and 41% of these jobs could even be filled by people with no college degree. The other way around, 60% of the graduates in economics and social science would be able to substitute for graduates in other fields, and 30% could step in for people who have no college degree whatsoever. The substitution as it actually takes place (realized substitution) was established by inquiring into the predecessor's and successor's training, similarly to the

Table 5

Predecessor and Suitable Successor for the Position Present Held by a Political Scientist - Survey 1969 (Percentage)

Predecessor	Suitable successor					Total (n=402)	Percentage predecessor
	Political sc. graduate	Other soc. sc. graduate	Graduate other subjects	University degree not necessary	Other responses no response		
Political science graduate	85	12	0	2	0	100	12.2
Other social science graduate	47	15	30	2	4	100	11.4
Law graduate	44	7	40	0	7	100	6.7
Graduate, other subjects	50	11	30	0	9	100	11.4
Non-graduate	20	17	15	38	10	100	14.9
No predecessor	48	17	20	9	6	100	31.6
No response	28	11	17	11	34	100	11.7
Total	46	14	20	20	9	100	100.0

Source: D. Hartung, R. Nuthmann, and W. D. Winterhager, Politologen im Beruf, Stuttgart: Klett, 1970, p. 117.

Table 6
Latent Substitution and Realized Substitution of Highly Qualified Manpower 1979 (Percentage)

University and college degree in	Latent Substitution				Realized Substitution			
	passive: could be substituted by persons with		active: could substitute for persons with		passive: has been substituted by persons with		active: has substituted for persons with	
	other subjects	no college degree	other subjects	no college degree	other subjects	no college degree	other subjects	no college degree
Economics and social sciences	12	41	60	30	40	30	17	33
Law	42	19	53	-				
Mathematics	58	23	65	13	29	20	58	4
Physics	58	19	67	12	44	7	33	15
Chemistry	43	10	34	16	6	2	5	2
Biology	38	-	45	6	61	-	46	-
Architecture	15	36	11	42	7	17	9	22
Appl. engineering, mining and metallurgy	38	22	50	23	12	8	24	11
Mechanical engineering	46	31	33	41	16	21	17	20
Electrical engineering	47	32	33	40	25	21	28	17

Source: Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit, Berufliche Flexibilität und Arbeitsmarkt, Nürnberg 1977, pp. 14 and 20 (Quintessenzen aus der Arbeitsmarkt- und Berufsforschung, No. 7).

way this had been done in the above-mentioned study on political scientists, save that employers were also questioned in this case. The result was that 49% of the positions held by mathematicians were subsequently assumed by persons with other qualifications (29% with a college degree in another subject, 20% having no college degree); of the mathematics graduates who changed jobs, 58% assumed positions previously held by graduates in other subjects, and 4% replaced non-graduates.

Requirements forecasts also make use of this type of calculations, whereby data on substitution processes are used as a basis for adding estimates of minimal and maximal demand to the conventional prognoses. However, when it is established for example that the maximal demand for law graduates is 3.7 times higher than the minimal demand,³¹ such calculations cease to have much value for planning in higher education.

In addition, proponents of this flexibility approach suggest that training be changed in order to make graduates more flexible in regard to the employment they can assume. Demand is made for quantitative expansion of those subjects which have been calculated to have a high active substitution potential, as well as for preference to be given these courses of study in subsidizing re-training.

Finally, it is generally suggested that certain "key qualifications"³² be placed at the core of pre-career education. To be sure, this concept is based on the assumption that low specialization is the decisive precondition for the ability and readiness to be mobile; yet it is still not known which interaction of qualification, motives, value orientations, etc., really determines such mobility.³³

d) A fourth direction in research has to do with strategies within enterprises to utilize qualifications. The Institute for Social Research in Munich, in particular, has carried out a great number of studies on the qualifications required in certain specific occupations, on personnel policy, etc.³⁴ Among other things, they have established that in the field of mechanical engineering the number of highly qualified engineers has on the whole increased enormously without any corresponding economic growth having occurred, and that the proportion of engineers employed relative to other types of employees tends to vary considerably from enterprise to enterprise. Critical mention is made of one unwanted consequence of this development: that opportunities for advancement for graduates with a lower level of education have lessened as a result. In addition, a study comparing the qualification structures in France and West Germany has come to the conclusion that a system which places stronger emphasis on specific qualifications is likely to develop more complex occupational roles and give graduates with lower levels of education a greater opportunity to define their own roles.

In addition, a great number of studies have been made in West Germany analyzing in detail the professional activities of highly qualified manpower as an aid to designing curricula for corresponding courses of study.³⁵ These studies generally proceed from the assumption that there exists a very clear correspondence between subject and occupation.

e) A fifth direction for research is concerned with investigating the interrelation between technological development, the rationale of the socio-economic system and the organization of work. In contrast to those studies which stress just technological developments and the organization of work, this approach proceeds from the assumption that employers' interest in maximizing their profit has a great deal to do

with the way rationalization is carried out in a given enterprise. Whereas technological development as such tends to have the effect of raising cognitive requirements, the profit motive tends to lead to the rationalization decision to get by with personnel whose educational level is lower. Various studies carried out at the University of Göttingen's Social Research Institute on developments in the organisation of work and in the structure of occupational roles³⁶ support the conclusion that these trends are bringing about a polarization in the structure of qualifications, whereby more highly qualified manpower as well as semi-skilled and unskilled labor will be required, while the demand for intermediate qualifications is tending to decline.

f) The sixth and final approach listed in the previously cited survey comprises studies that stress the selective or status distributive function of education. The author mentions in particular researchers at the Max Planck Institute for Educational Research, although a number of other scholars are also interested in this approach.³⁷ Analyses of the political decision-making process, requirements notions, and recruitment strategies, among other things, are drawn upon to support the conclusion that over the course of the expansion of higher education the tendency in recruiting graduates and in revamping the structure and curricula of higher education has been away from fixed notions about which qualifications are needed. Instead, more and more effort has gone into selection and into maintaining the social hierarchy and its legitimation.

As this range of approaches shows, research is to some extent relativizing the popular -- and politically dominant -- notion that there is a very close tie between individual courses of studies and specific occupations. Nonetheless, the predominance of this notion continues to be reflected for one in the fact that there is a preponderance of manpower requirements analyses and studies on employment that assume that specialized qualifications are required. For a second thing, even those approaches that criticize this notion have such a fixation on it that they are mainly preoccupied with falsifying it.

5. Doubt about the Existence of a "Soft" Market

In the United States and a number of other countries, studies on the rate of return for investments in education are widespread. The cost-benefit approach goes on the assumption

- that the system of rewards in occupation is determined mainly by differences in the benefit to society of various accomplishments and is regulated to a certain extent by market mechanisms,
- that in their structure, quantitative development and curricula, institutions of higher education are relatively responsive to the labor market or to students' behavior,
- that training is not geared specifically to the acquisition of certain qualifications and that there exist only in few cases very specific qualification requirements in the occupation system, so that adjustment processes are relatively uncomplicated.

Although the market's imperfection is taken into account in more sophisticated academic discussion, and although some scholars cast the basic assumptions in question -- the fact remains that the cost-benefit approach is popular and economic debate on discrepancies between the education system's output and the occupation system's requirements is limited to the alternative between functionality and 'screening' -- which to my mind shows clearly that in principle the above-mentioned basic assumptions meet with general acceptance in the United States and quite possibly in a number of other countries, as well.

Generally speaking, the tendency in West Germany is to share basic functionalistic assumptions about the social hierarchy to the effect that differences in social status are, for the most part, the 'just' reward for achievement. But if we consider once again the features of higher education in relation to the labor market as described in the preceding chapters -- the employment of college graduates predominantly in the public sector, strong government influence on higher education, and the perception of education as a process of job-gearred qualification -- then it seems senseless from the very beginning to try to use graduates' income as a yardstick by which to measure the 'social return' of investments in education. Thus, in West Germany the philosophy behind the cost-benefit approach does not figure in surveys of this type, but rather if at all, in economists' proposals that the universities reintroduce fees or that the relationship between credentials and career in public service be made more flexible. The suggestion seems to be that the society, if it does not fit these economic models, ought to be shaped correspondingly.

Data on the relationship between education and income are provided by the census. In 1970, for instance, census data showed that the average monthly income of persons having a university degree is almost twice as high as the average income of persons with no more than the compulsory number of school years plus a completed apprenticeship (cf. Table 7). In addition, it has been calculated on the basis of 1964 data that the life net income of a university graduate is 91% higher than that of a person with no training whatsoever (ungelernter Arbeiter).³⁸

The predominance of the public sector of employment in the West German market for college graduates has given rise to a specific political debate in that country, which has also come to have a bearing on research. Employer representatives frequently contend that a close interrelationship between educational level and occupational rank is a characteristic of the public sector, whereas in the private sector graduates from short-cycle institutions, who are felt to be geared more toward the practical requirements of an occupation, have the same career chances as university graduates. This contention has been critically examined in a number of surveys. These have consistently shown that although graduates from short-cycle institutions have a better chance of reaching higher positions in the private sector than in the public sector, university graduates on the whole retain their clear advantage in the private sector, and this advantage tends to grow in the course of a career.³⁹

6. Emphasis on Preparation for Career -- Disregard for Other Socializing Effects of Higher Education

One can see, in comparing the overall results of research on college outcomes in West Germany and the United States, that greater emphasis is placed in West Germany on the relationship between university study and occupation. Rarely are studies conducted on the relevance of higher education for other life spheres. This difference in the focus of research in the two countries is undoubtedly due to the fact that in West Germany universities are ascribed more of a career-preparatory function than is the case in the United States. Additional effects relating to life in general tend to be seen as unintentional by-products of college education; and research into non-cognitive outcomes focusses primarily on their occupational relevance.⁴⁰

One must add that this strong occupational orientation by no means corresponds to the universities' official self-image. Academic

Table 7
Monthly Net-income of the Labor Force 1970 - Census Data

Education/Training	Monthly Income (DM) in per cent							Total	Median	Index
	-300	300-500	500-800	800-1,200	1,200-1,800	1,800-2,500	2,500 and over			
Without completion of any vocational training	10.5	21.1	36.7	25.3	4.1	1.8	0.4	99.9	713.-	100
Apprenticeship completed	4.0	7.9	30.0	40.7	11.8	4.0	1.5	99.9	959.-	135
Training at higher vocational school	5.1	10.3	26.7	33.6	16.5	5.3	2.5	100.0	1,010.-	142
Short-cycle degree	0.6	0.5	2.0	18.1	46.1	22.0	10.8	100.1	1,738.-	244
University degree	1.5	2.1	6.0	16.6	33.1	23.4	17.3	100.0	1,820.-	255

Source: K. Parmentier and M. Tessaring, "Bildungswesen und Arbeitsmarkt für Hoch qualifizierte," op. cit., p. 279.

education (wissenschaftliche Bildung) has traditionally stood in the foreground; the period for actual career training was generally reserved for the ca. two years after graduation. If one however compares West Germany university curricula with those in the United States, one can see that in both countries there is to be found a high degree of career-oriented specialization, in Germany even before the first degree (diploma, state examination, master's degree). Indeed, in the Hochschulrahmengesetz of 1976 it has been established as official goal to relate university education clearly to occupational preparation:

"Paragraph 2. Responsibilities: 1. Institutions of higher education, in accordance with their position of responsibility, serve the encouragement and development of the sciences and the arts through research, teaching, and study. They prepare the students for professional endeavors requiring the application of scientific knowledge and scientific methods or the capacity for artistic expression."

"Paragraph 7. Educational Goals: Teaching and study should prepare the student for a professional field of endeavor and provide him with the required specialized knowledge, abilities, and methods appropriate to the respective course of study, in such a way that he will be capable of scientific or artistic endeavor and of responsible behavior in a free, democratic and social, constitutional nation."⁴¹

Previous studies on the relationship between university education and occupation, which have mainly focussed on individual subjects or occupations, have tended to concentrate on collecting information on such career features as recruitment, mobility, income and position; furthermore they have been concerned with describing job responsibilities as well as evaluating the substantive connection between university study and occupation. The most widespread form of investigation is the interview among graduates, followed by interviews among employers and job analyses conducted by the researchers themselves. Such studies are characterized by diverse goals: to determine, for example, the qualification requirement in occupations, to gather evidence for the innovative effect of educational training, to find new areas of employment for graduates in specific field, or to check the results of reform in higher education. Common to almost all such studies is their exclusive concern with the relationship between university study and occupation.

It would exceed the bounds of this brief analysis to present the conclusions of such studies in detail.⁴² It should suffice to mention a few which have particularly noteworthy bearing on the debate on the function of higher education.

A weakness of these studies as a whole is that they fail to give a clear picture of the relevance, variously, of the specific skills, general abilities and social skills acquired during university study for subsequent employment.

An inquiry conducted among engineers (university and short-cycle levels) about the job requirements considered most important showed the following characteristics at the top of the list: ability to work independently, general technical grasp, sense of responsibility, intelligence, openness to new experience, problem solving ability, reliability, good judgment and decision-making capability, ability to work systematically, and willingness to work hard. Out of a list of ca. sixty different items, special knowledge was only seldom mentioned as important.⁴³

When asked, however, which of around twenty items were considered decisive for advancement in an enterprise, the item 'specific

knowledge and skills' was rated highest by far.⁴⁴ It appears that engineers consider professional qualifications the most important. In the first question posed, however, general abilities were artificially placed in the foreground because specific knowledge and skills vary widely from job to job, and any question relating to them would automatically produce a thin spread of responses among the various items.

Another study on the activities of university graduates in private enterprises established that graduates have little difficulty meeting the technical requirements of the job in the initial phase of employment. However, they do have difficulty adjusting to the social organization of the enterprise (cf. Table 8). This reflects the fact that university study was not traditionally designed to provide such social skills. More recently it has been considered an important feature of curriculum reform to give students a better all-round preparation for actual professional life.⁴⁵ It still remains to be seen whether it might not be a better idea to let these social skills be acquired on the job rather than in the universities -- whether, in other words, college education does not in fact of necessity display certain 'deficits' vis-a-vis occupational requirements.⁴⁶

The hitherto biggest research project on the socialization effects of higher education in West Germany has compared, among other things, the self-image of students and graduates with the expectations other population groups have of the university.⁴⁷ This study -- cf. Table 9 -- shows that in many points there exists congruence, for example in the expectation that university graduates assume a special position in society by virtue of their educational niveau, reasoning power -- as some also feel -- social responsibility. University graduates point up their theoretical capacity and, in particular, their "critically independent intellectuality" (critical judgment, objectivity, lack of bias, and autonomy). On the other hand, they are more reluctant than other social groups to ascribe moral and social virtues to themselves.

All in all, these studies on the qualifying and socializing effects of higher education in West Germany are highly colored by the prevailing understanding of what the tasks of higher education should be: specific qualifications and a solid scholarly foundation are rated high by both students and graduates while at the same time in great demand as part of job requirements. However, these studies have also produced a number of results that fail to fit into this pattern. It is quite possible that the differences from country to country in job requirements and in the socializing effects of higher education would prove smaller if in each country the investigations could be less prejudiced by the characteristic national objectives of higher education.

7. The Academic Bias in Higher Education and the Insignificance of Prestige Distinctions -- Obvious Factors Taken for Granted in Research

As we have seen, many characteristics of the relationship between higher education and occupation have emerged as focal points of research. It can also be shown that many such characteristics tend to be taken for granted to such an extent that they hardly figure in research.

The academic bias of university education -- the prime concern about wissenschaftliche Bildung -- is one such "obvious" feature.

Table 8
Adjustment Problems of Recent University Graduates in Enterprises, by Subject
Studied — Survey Data 1971

Type of difficulty	In Percent		Engi- neering	Science	Social Science
	Eco- nomics	Law			
No response, no difficulties	10.5	13.6	16.9	16.1	7.4
Familiarization, general adjustment to new environment	29.6	38.6	23.3	32.8	29.6
Meeting demands professionally/technically	13.8	15.9	11.1	17.5	-
Leadership	2.0	-	3.2	12.4	7.4
Working autonomously, carrying out projects	3.3	2.3	4.2	3.6	3.7
Unsatisfactory team spirit, trouble with colleagues	11.2	-	11.1	13.9	7.5
Organization, familiarization with procedural formalities	21.1	20.5	22.8	22.6	29.6
Familiarization with the hierarchy and distribution of responsibilities	17.1	13.6	17.5	13.1	18.5
Integration of one's own position in a "meaningful whole," orientation about one's rights and obligations	23.0	13.6	22.2	22.6	11.1
Familiarization with the informal structure of the enterprise	18.4	13.6	18.5	10.2	22.2
Difficulties with the management style, with superiors	15.8	4.5	15.3	8.8	11.5
Insufficient opportunity for familiarization	9.2	11.4	8.5	5.8	14.8
Job definition lacking	7.9	11.4	7.4	9.5	11.1
Other problems	30.7	18.3	28.5	32.9	25.9

Source: Deutsche Gesellschaft für Personalführung, Orientierungsprobleme von Hochschulabsolventen beim Eintritt in die betriebliche Praxis, Neuwied: Luchterhand, 1972, p. 80.

Table 9
Expectations Regarding the Qualities of University Graduates and Educational Aims of the University --
Survey Date (Percentage)

Expectations/ Aims	Depth interview graduates and non graduates	Educa- tional aims of docu- ments	Expecta- tions of qualities in wanted	Representative opinion poll No. 1		Pilot-Study 30 year old graduates and non graduates		
	N=314	N=100	N=466	N=2,104 whole sample	N=65 graduates only	N=401 whole sample	N=134 graduates only	N=120 nongraduates only
Knowledge	39.4	17	9.7	64.1	76.9	67.7	72.0	65.9
Interests	4.5	20	8.2	31.7	58.5	53.0	56.4	37.5
Intelligence	34.4	44	10.1	57.8	72.3	62.3	60.3	65.9
Working techniques	2.9	25	3.4	22.7	41.5	17.0	17.0	13.4
Rhetoric ability	3.5	4	2.8	53.9	67.7	63.3	61.6	64.2
Creativity	1.9	6	6.7	11.9	18.5	13.5	15.0	10.4
Objectivity	14.3	15	0.6	24.5	49.2	32.8	36.4	21.7
Critical thinking	9.9	32	0.4	34.8	69.2	75.4	80.5	63.2
Tolerance	6.4	14	0.2	25.8	40.0	49.3	55.1	40.0
Self-criticism	1.9	14	-	22.1	38.5	36.9	41.6	27.5
Independence	6.7	26	10.1	28.9	49.2	25.1	29.2	17.5
Initiative	5.4	21	10.7	36.4	50.8	24.6	24.1	22.5
Organizational ability	3.5	1	11.8	26.6	27.7	14.0	15.6	13.4
Commitment	1.3	3	22.3	18.4	20.0	8.4	6.5	4.5
Honesty	1.3	12	0.7	15.6	7.7	4.7	5.8	5.8
Personality	-	34	7.3	-	-	-	-	-
Sense of responsibility	13.7	15	4.3	41.6	56.9	46.1	45.5	41.6
Good manners	6.1	1	4.5	39.3	44.6	23.9	22.7	27.5
Social relations	9.6	13	38.4	41.7	36.9	18.5	15.0	23.3
Social responsibility	15.3	31	0.6	21.3	32.3	16.0	17.5	13.4

Source: G. Lind, "Different Views of Aims and Purposes of Higher Education: Some Empirical Findings," In: Excellence or Equality: Dilemma for Higher Education? Contributing Papers, 3rd International Conference on Education at the University of Lancaster, 1-5 September 1975, Lancaster, 1975.

Research has tended to neglect its importance for the relationship between studies and occupation, save in two contexts where it repeatedly comes up. One is in studies on the employment of university graduates where a frequent question is the extent to which an occupation requires such skills as problem-solving ability, innovative behavior and research capability, for which academic, as opposed to a more practically oriented study is considered desirable.

Thus, for example, an investigation carried out in 1972 among over 2000 university graduates employed in public administration in the state of North Rhine-Westphalia showed that their jobs permitted considerable latitude for independent action, requiring corresponding abilities (cf. Table 10). The authors of the study expressed surprise about this large measure of independent activity and also about the fact that the respective responses failed to correlate positively with positions in the hierarchy or grades on university examinations, which are seen here as an indicator for abilities.

The second context in which the role of academic education for the relationship between higher education and employment is taken into account is in studies on differences in occupational responsibilities between university graduates and graduates from short-cycle institutions (Fachhochschulen). In view of the fact that in West Germany much effort is spent in investing short-cycle education with at least some measure of the Wissenschaftliche Bildung which informs the traditional ideals of higher education -- the best example of such efforts is the attempt to establish comprehensive universities⁴⁸ -- it would seem very important to find out in what measure similarities exist between the occupations into which graduates from these two branches of higher education eventually go.⁴⁹

According to a survey of engineering graduates, graduates from short-cycle institutions -- including those in higher positions -- named special skills relatively frequently as important for carrying out their jobs, whereas university level graduates were more inclined to mention general abilities, value orientations and social skills.⁵⁰ If these self-evaluations can be considered valid, this means that even when graduates from short-cycle institutions manage to advance to positions that are more easily attained by university graduates, this less often guarantees them the kind of occupational role that permits autonomy in the social organisation of work.

All in all, however, these studies are not particularly systematic in dealing with the occupational relevance of higher education's academic bias. Academic stringency as a goal of higher education is apparently not enough of a problem to warrant it becoming an important issue in research on the relationship between university studies and occupation.

It corresponds to the traditional self-image of the German university that there is practically no prestige hierarchy among universities in that country, a fact underlined by uniform admissions requirements and the absence of any impediments to transfer from one university to the other. This self-image is reflected in research by the fact that the question of prestige differences is hardly ever raised. To be sure, differences between different types of institutions -- universities, teachers training colleges, comprehensive universities, short-cycle institutions -- as well as between different subjects are, as a rule, registered; but differences between individual universities with regard to a particular course of study are practically universally considered uninteresting for research.

Table 10

Frequency of Demand for Autonomous Decisions/Action on the Part of College Degree Holders Employed in Public/Administration, by Unit of Work - Self-rated

Establishing the facts of a matter	46%
Calculating consequences	33%
Judging expediency	39%
Establishing suitable procedural alternatives	24%
Making decisions	42%
Establishing plans or regulations	23%
Assuming a task on one's own initiative	33%
Assuming a task on someone else's suggestion (superior, etc.)	76%

Source: G. Brinkmann, W. Pippke and W. Rippe, Die Tätigkeitsfelder des höheren Verwaltungsdienstes: Arbeitsansprüche, Ausbildungserfordernisse, Personalbedarf, Opladen: Westdeutscher Verlag, 1973, pp. 291-2.

An exception to this calculated neglect is the regularly published investigation by the Federal Office of Statistics on the further educational interests of college-bound secondary school leavers. One objective is to determine which institutions are more popular than others. As can be seen in Table 11, the top three places in 34 different subjects were taken by 24 different institutions of higher education. To be sure, one or two universities such as Muenster and Munich stand out in popularity, but this seems likely to be due to a wish not to have to go too far away from home or to live in a big city, and can hardly be taken as an indicator of its quality. All available information appears to support the conclusion that differences in quality among institutions of higher education whose status is formally equal up till now have had limited bearing on a graduate's chances on the labor market. There are, however, indications that chances are being impaired for graduates from particular institutions which have recently become politically stigmatized.

8. Students' Attitudes, Motives and Expectations: The Role Played by Planning Perspectives in Research

For a long time, surveys on students' attitudes, motives and expectations have tended to focus on three themes: attitudes toward curricula, courses, etc., political attitudes, and living conditions. This also holds true for the few representative surveys of the whole student population, sponsored by the federal government: the regular inquiries into student living conditions, and the occasional polls on students' attitudes toward their studies and toward politics.

Table 12, for example, summarizes the responses of 4000 students selected for a representative poll conducted in winter 1973-74 on

Table 11
Preferred University by Subject -- Survey of College-prep. Secondary School Leavers
1975

Subject	Rank 1st	2nd	3rd
English	Münster	München	Aachen
Architecture	TU Aachen	TU München	TU Stuttgart
Civil engineering	TU Aachen	TU München	Bochum
Business administration	Köln	München	Münster
Biochemistry	Tübingen	FU Berlin	München
Biology	Münster	FU Berlin	Hamburg
Chemistry	München	Münster	Köln
Electrical engineering	TU Aachen	Bundeswehr	München
Nutrition	Bonn	Giessen	München
Pedagogy	Bundeswehr	Freiburg	Marburg
Geography	Hamburg	Münster	Bochum
German	München	Münster	FU Berlin
History	Münster	FU Berlin	Köln
Business education	GH Essen	München	Nürnberg
Information science	Dortmund	Bundeswehr	München
Nutritional biochemistry	TU Berlin	München	Hamburg
Physical education	SH Köln	Münster	München
Mechanical engineering	TU Aachen	München	TU Stuttgart
Mathematics	Münster	München	Köln
Medicine	München	Freiburg	Münster
Pharmacy	Bonn	Münster	München
Physics	Hamburg	Münster	TU München
Political science	FU Berlin	Marburg	Hamburg
Psychology	FU Berlin	Münster	Hamburg/Freiburg
Journalism	München	Münster	FU Berlin
Law	Münster	Köln	München
Roman languages	Münster	München	Freiburg
Social studies	München	Frankfurt	Hamburg
Social work (Sozialpädagogik)	Münster	Freiburg	Bremen
Social work (Sozialwesen)	Münster	Freiburg	Mainz
Sociology	Marburg	FU Berlin	Bochum
Process engineering	GH Essen	TU Aachen	TU Stuttgart
Economics	Köln	GH Essen	Münster
Dentistry	München	Münster	Hamburg

Source: Cited in NC-Initiativgruppe Freiburg, Numerus clausus - ohne Ausweg? Mannheim and München: Parcus 1976.

TU: Technical University, FU: Free University, GH: Comprehensive University, Bundeswehr: Armed Forces College, SH: Physical Education College.

Table 12
Students' Attitudes toward Reform in Higher Education - Poll 1973-74

Item	Mean Score [†]		
	Students at Universities	Short-cycle Institutions	Comprehensive Universities
Shortened course of studies promotes assembly-line instruction	6.2	5.9	6.4
Everything should be done to insure that instruction proceeds smoothly and efficiently	6.0	6.4	6.0
The comprehensive university provides opportunities for combining theoretical and practical courses of study	5.0	5.6	4.5
The comprehensive university facilitates transfer among institutions and changes in major	4.8	5.4	3.8
Low student participation in university elections is an indicator that student place low value on the work of student council, etc.	4.1	4.2	4.3
Continual reform in higher education only makes students insecure about their courses of study	3.7	4.1	4.2
Trouble-makers should be expelled	3.5	3.9	3.4
Full professor should be protected from being outvoted by lower-ranking faculty and students in matters of research	3.4	3.6	3.3
Universities nowadays serve extreme left-wing groups as a field of experiment	3.0	3.1	2.7
Most courses of study could easily be shortened by one year	2.5	2.3	2.0
The length of study ought to be shortened because the graduate's job will continually require further education in any event	2.4	2.3	1.9
Students ought not to have an influence on university decisions that will continue in effect after their departure	2.3	2.4	1.8
University reforms have a detrimental effect on instruction	2.2	2.4	2.3

Source: Infratest, Hochschulbarometer: Befragung von Studierenden Wintersemester 1973/74, München, 1974, p. 29.

[†]Scores: 8 = fully agree; 1 = fully disagree.

student attitudes toward reform in higher education. According to this poll, the students were by no means fed up with reform, as had often been contended. Their criticism was levelled primarily at the government's proposals that the length of study be curtailed, that full professors should have the majority in university research commissions, as well as that student co-determination should be curtailed. And although on balance the comprehensive universities came off well, a break-down of the student population shows differences: those students for whom the comprehensive universities promised a way to educational advancement -- students at short-cycle institutions -- were most positive in their assessment, whereas the least positive assessment came from students already enrolled at such institutions.

In contrast, more recent large-scale surveys are very strongly marked by the assumption that secondary school graduates' aspirations to study as well as career expectations on the part of college graduates are altogether too high. Ever since the beginning of the Seventies, students in their last year at the college-preparatory track of secondary school are regularly asked whether they intend to go on into higher education. As Table 13 shows, the percentage planning to study at university has dropped over the years. First follow-up studies indicate, however, that these responses are not particularly valid.⁵¹

Similarly, a large-scale study on students in their final year of study is currently being carried out. The objective of the study is to find out to what extent students adjust -- by choice of major or of courses as well as to their occupational aspirations -- to the possibility that the expansion of higher education will bring a loss of certain privileges for graduates in the occupation system.⁵² The outcome of this study has yet to be published.

All in all research on student attitudes is less prefigured by specific characteristics of the West Germany situation than is the case with research on other aspects of higher education and its relationship to employment. The large-scale surveys are however heavily dependent on planning perspectives.

9. Higher Education and Socio-economic Status: Focus on Selection Criteria and Social Policy, not on Equality of Results and Mobility

Over the past fifteen years, hardly an issue has dominated West German political debate on the education system the way the question of equal opportunity has. As was the case in the United States, however, a line was drawn for a long time between equal opportunity in education on the one hand and the interrelationship between educational attainment and occupational career on the other.⁵³

A large number of surveys have been carried out on the relationship between parental background and educational career.⁵⁴ Regular surveys on students' living conditions have shown that the percentage of university students from a blue collar background has risen from 4% in 1952 to 13% in 1976 (cf. Table 14). The traditional path for upwardly mobile, gifted young people from a lower socio-economic background was through those schools which have subsequently been upgraded into short-cycle institutions; they have retained this function, even though they now require twelve years of secondary schooling before admission: the proportion of students from blue collar families at these colleges is twice as high as at the traditional universities.

Many surveys of the occupational careers of college graduates also take social background into consideration. However, in contrast to

Table 13

Further Educational Plans of College-prep Secondary Leavers (in Percent)

Year of Secondary School Completion	to enrol at institutions of higher education	undecided	not to enrol at institutions of higher ed.	Total
1971	87.2	7.2	5.6	100.0
1972	89.7	6.2	4.1	100.0
1974	84.6	9.3	6.0	100.0
1975	78.8	12.4	8.8	100.0
1976	75.3	15.4	9.3	100.0
1977	72.7	16.9	10.4	100.0

Source: "Größere Unsicherheit der Abiturienten über weiteren Bildungsweg," Informationen Bildung und Wissenschaft, No. 38 (September 1975), p. 987; Bundesminister für Bildung und Wissenschaft, op. cit., p. 38.

the situation in the United States, West German researchers and policy makers have been less concerned with the relevance of higher education to the relationship between social background and education or between education and career. The dominant points of view can be distinguished as follows:

a) In the United States, the horizontal structure of secondary education and the large quota of enrollment in upper secondary school make college admissions the most visible stage of selection within the American education system. In view of the fact that in West Germany secondary education proceeds along various tracks, this area of education is the focus of debate on equal opportunity in that country.

b) Admission to higher education in West Germany is contingent upon attaining a certain -- relatively high -- uniform standard of achievement. Until this prerequisite is met, no additional criteria may become an issue. It appears that the Carnegie Council on Policy Studies in Higher Education was in a sense moving toward this way of thinking in its proposals for "selective admission" in the wake of debate over the Bakke case.⁵⁵

c) The fact that those qualified by completion of the appropriate track in secondary school are automatically entitled to university study in West Germany means that the decision as to the criteria governing selection among the qualified applicants poses legitimation problems of an extremely difficult nature. Furthermore, the decision on these criteria is indisputably a matter of public responsibility. The importance of such a decision for manpower planning figures here, as well.

It is characteristic of West Germany that on the one hand, the demands made on admissions that they have predictive validity are particularly high; on the other hand, it is considered natural and right for social criteria to figure prominently in the selection of qualified applicants: as an offspin of selective admissions in West Germany,

Table 14
Social Background of College Students

Father's Occupation	Universities					Tech. + Voc. Colleges	
	1952	1962	1967	1973	1976	1973	1976
Civil servant	38	33	30	27	25	15	14
Salaried employee	23	30	31	33	35	31	31
Self-employed	35	28	30	26	24	23	21
Manual worker	4	6	7	11	13	27	28
Others	0	3	2	3	3	4	6
Total	100	100	100	100	100	100	100

Source: Regular surveys on "das soziale Bild der Studentenschaft" commissioned by the Bundesministerium für Bildung und Wissenschaft.

the hardship quota, giving applicants from a lower socio-economic background a certain advantage is fairly high.

d) In West Germany, social mobility does not have the same function for the prevailing social order as it does in the United States. In the United States, mobility appears to be the major preoccupation, overshadowing in importance such problems as income differentials or differentials of living conditions.⁵⁶ Americans are even inclined to accept the consequences that although equality of opportunity in education enjoys high priority in social policy, the influence of educational success in determining socio-economic status is supposed to be kept low: a circumstance that only makes sense if one bears in mind that Americans view opportunity for individual advancement as the highest goal which constantly needs demonstration.

In West Germany, social mobility is only one of a number of goals, and indeed less importance is attached to it than to a social policy aimed at keeping discrepancies in living conditions within bounds.

Studies on the determinants of individual advancement such as those prompted in the United States by the work of Duncan, Sewell et al., have been fairly late in attracting attention in West Germany. The same holds true for the Jencks study. The situation in West Germany being as different as it is, it appears unlikely that such approaches will meet with the same great interest as was accorded them in the United States.

10. The Future of Higher Education and Employment in West Germany and the Future of Related Research

Current discussion about future developments in the relationship between higher education and employment in West Germany is dominated by the question: what changes are taking place in the occupational outlook for college graduates, in view of the fact that in terms of traditional notions about the appropriate employment of university graduates, there is felt to exist an "oversupply" of graduates. Since major changes are to be expected in any event, it is all but

impossible to make accurate predictions. However, economic difficulties and the frustration of many a hope that had been placed in the education system a decade ago now only serve to promote the spread of pessimism.

Debate has tended to focus so strongly on this issue because, in addition, the entire system of higher education together with the whole of the market for graduates are being affected by changes in the relationship between higher education and employment. In countries that have a clear-cut prestige hierarchy of colleges and universities, the prestigious institutions are not as directly affected by this development as is the rest of the system of higher education; in West Germany, on the other hand, where prestige differences hardly figure, all universities are almost equally involved.

All indications are that in the near future this discussion will have great impact on research. It appears that other issues are already slipping into the background of research attention. Up to this point we have isolated three ways in which the actual situation of higher education and employment has an impact on research in this area. First, that the peculiarities of the system, including the major preoccupations in a country, generally play an important role in defining the focal points and particular approaches of research. Second, that in some cases salient features of a system are so much taken for granted that few data are collected on these characteristics. And finally, current problems with political and planning decisions tend to be carried over in research. In view of research on further developments, a fourth aspect, one which up to now has only implicitly figured in this description, ought to be stressed: the influence of various political camps on development in research.

Factional lines follow a different course in our area of concern than they do over many other issues of societal policy. The decisive question is whether one is prepared, in principle, to take a positive -- or a negative -- view toward a university education that goes beyond the conventional notion of what would be the adequate occupational role for a college-trained person. One can find the whole spectrum of political opinion, from left to right, grouped on both sides of this debate, although conservatives tend to be more often sceptical about high quotas of highly qualified manpower.

Some aspects of future developments concern both sides, and thus in some research approaches they have a common interest. What strikes the eye, however, is the fact that the actual focal points of research differ from one camp to the other.⁵⁷

Opponents of strong expansion in higher education stress friction and indications of saturation on the labor market, for example the growing unemployment among college graduates, low replenishment demand, reduced job opportunities of persons with lower level of education as a consequence of an alleged overexpansion of higher education.

Advocates of expanding higher education, on the other hand, are particularly interested in how other countries adjust to higher quotas of college graduates,⁵⁸ the innovation effects of what is presumed to be "overqualified" manpower, models for restructuring the division of labor, and so forth.⁵⁹ It would quite certainly be beneficial to further debate if there would be more emphasis on those research approaches that deal with questions relevant to both camps.

One can surely not expect research to question consistently all of a society's major philosophies and preoccupations about higher education, employment and the relationship between the two, nor would it

make sense for research efforts to be distributed universalistically across the whole spectrum of fundamental questions. A certain concentration of research approaches obviously is favorable in order to utilize the rare resources efficiently for the necessary problem-solving in society. The previous analysis, however, taking up the example of the Federal Republic of Germany, has shown, that research -- being influenced by the actual situation -- tends to neglect certain important problems and to be preoccupied with too particular questions.

The same can be said to hold true for the United States, where research is all too often inclined to assume that all-embracing market regulation is the answer to everything, that the needs of students and society are to a large extent met by the diversity of higher education, that it is necessary for there to be large discrepancies in niveau among the various institutions of higher learning, and so forth. The greater volume of research in the United States does facilitate a variety of topics and approaches; on the other hand, American research appears on first analysis to be more susceptible to certain dominant paradigms than is the case in West Germany. -- In any event, I consider it essential to reflect regularly about the preoccupations in research trends and accord special attention to those research approaches that deliberately place these preoccupations in question. Comparative research is probably one of the most important -- or perhaps the most important -- means to overcome these limitations.

NOTES

* The essay was translated by Adriane Heinrichs-Goodwin.

- 1 For analyses of related theories and research in the Federal Republic of Germany, cf. G. Brinkmann et. al., Bildungsökonomie und Hochschulplanung, Darmstadt: Wissenschaftliche Buchgesellschaft, 1976; G. Faltn and O. Herz, eds., Berufsforschung und Hochschuldidaktik, Vol. I, Hamburg: Arbeitsgemeinschaft für Hochschuldidaktik, 1974 (Blickpunkt Hochschuldidaktik, No. 32); D. Hartung, R. Nuthmann, and U. Teichler, "Bildungssystem und Beschäftigungssystem - Zum Verhältnis von Bildungssoziologie und gesellschaftlicher Entwicklung," in K. M. Bolte, ed., Materialien zur soziologischen Forschung, Darmstadt and Neuwied: Luchterhand, 1978; K. Hurrelmann, Erziehungssystem und Gesellschaft, Reinbek: Rowohlt, 1975; B. Lutz, "Bildung und Arbeit in der deutschen Soziologie nach dem zweiten Weltkrieg und das aktuelle Problem der Qualifikationsbestimmung," Soziologie, No. 2 (1976), 5-11; C. Offe, "Bildungssystem, Beschäftigungssystem und Bildungspolitik: Ansätze zu einer gesamtgesellschaftlichen Funktionsbestimmung des Bildungswesens," in H. Roth and D. Friedrich, eds., Bildungsforschung: Probleme - Perspektiven - Prioritäten, Vol. I, Stuttgart: Klett, 1975, 217-252.
- 2 Cf. U. Teichler, in cooperation with D. Hartung and R. Nuthmann, "On the Changing Relationships between the Educational and Occupational Systems: Conceptions and Recent Trends," paper presented to the International Labour Office, World Employment Programme, 1976, chapter 3.
- 3 Cf. also K. Hüfner, H. Kühler and J. Naumann, "Higher Education and Manpower Planning in the Federal Republic of Germany," Geneva: International Labour Office, 1977, World Employment Programme Research, Working Paper, mimeogr. On higher education policy and the development on higher education cf. U. Teichler, "University

Reform and Skeleton Legislation on Higher Education in the Federal Republic of Germany," Western European Education, 4 (No. 3, 1972), 224-238 (part I); 5 (No. 4, 1973-4), 34-55 (part II); U. Teichler, "Problems of West German Universities on the Way to Mass Higher Education," Western European Education, 8 (Nos. 1-2, 1976), 81-120.

- 4 Including forerunner institutions of Fachhochschulen.
- 5 Cf. Bundesminister für Bildung und Wissenschaft, Grund- und Strukturdaten 1977, Bonn 1977, p. 94.
- 6 Ibid., p. 92.
- 7 Cf. Deutscher Bildungsrat, Bildungskommission, Bericht '75: Entwicklungen im Bildungswesen, Bonn 1975.
- 8 Bundesminister für Bildung und Wissenschaft, op. cit., p. 45.
- 9 6.6 per cent in 1970, according to an estimate made by the public employment service; cf. M. Tessaring, "Qualifikationsspezifische Arbeitslosigkeit in der Bundesrepublik Deutschland," Mitteilungen aus der Arbeitsmarkt- und Berufsforschung, 10 (No. 2, 1977), 229-242, p. 230.
- 10 Cf. Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit, Hochschulbildung und Arbeitsmarkt, Nürnberg 1975 (Quintessenzen aus der Arbeitsmarkt- und Berufsforschung, No. 3).
- 11 For these census data see K. Parmentier and M. Tessaring, "Bildungswesen und Arbeitsmarkt für Hochqualifizierte: Eine Übersicht," in Arbeitsgruppen des Instituts für Arbeitsmarkt- und Berufsforschung und des Max-Planck-Instituts für Bildungsforschung, eds., Bedarfsprognostische Forschung in der Diskussion, Frankfurt: Aspekte, 1976, 250-303.
- 12 M. Tessaring, "Qualifikationsspezifische Arbeitslosigkeit in der Bundesrepublik Deutschland," op. cit.
- 13 For the debate on requirements in West Germany cf. the collections edited by U. Lohmar and G. E. Ortner, eds., Die deutsche Hochschule zwischen Numerus clausus und Akademikerarbeitslosigkeit: Der doppelte Flaschenhals Hanover: Schroedel, 1975; and Arbeitsgruppen des Instituts für Arbeitsmarkt- und Berufsforschung und Max-Planck-Institut für Bildungsforschung, eds., Bedarfsprognostische Forschung in der Diskussion, op. cit., 92-105.
- 14 See L. Alex, "Absolventenangebot und berufliche Flexibilität," in U. Lohmar and G. E. Ortner, eds., Die deutsche Hochschule zwischen Numerus clausus und Akademikerarbeitslosigkeit: Der doppelte Flaschenhals, op. cit., 92-105.
- 15 H. Riese, Die Entwicklung des Bedarfs an Hochschulabsolventen in der Bundesrepublik Deutschland, Wiesbaden: Steiner, 1967; cf. also K. Hufner, H. Köhler and J. Naumann, op. cit., p. 67-72.
- 16 See especially W. Armbruster, Arbeitskräftebedarfsprognosen als Grundlage der Bildungsplanung: Eine kritische Analyse, Berlin: Max-Planck-Institut für Bildungsforschung, 1971 (Studien und Berichte, Vol. 23); W. Armbruster et. al., "Expanding Use of Highly Qualified Manpower: Conditions and Consequences," Conference intergouvernementale sur l'utilisation du personnel hautement qualifié (Venise, 25-27 Octobre 1971), Paris: OECD, 1971, 1-39.
- 17 On university admissions in West Germany cf. H. Asche, J. Luthje, and E. Schott, Der Numerus clausus oder Wer darf studieren?, Reinbek bei Hamburg: Rowohlt, 1973; H. Bahro, W. Becker, and J. Hitzpass, Abschied vom Abitur?: Hochschulzugang zwischen Numerus clausus und Massenbildung, Zürich: Interfrom, 1974;

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- 18 Die Zukunft der Hochschulabsolventen: Teil 1: Eine Übersicht über 23 Akademikerprognosen der "zweiten Generation", Nürnberg: Institut für Arbeit, 1976 (Materialien aus der Arbeitsmarkt- und Berufsforschung, No. 7/1976).
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COM

Herman A

Mr. Teichler effectively makes with the research preoccupations of that, even when we focus on the same of countries we have biases that research and come to objective conclusions most sensitive to these concerns, as United States. For example, in discussing Mr. Teichler suggests it is an "over United States and he goes further an educational success in determining to be kept low." And yet I don't see that education is an effective way

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COMMENT

Barry Bressler

Judging by the papers presented at this conference and, indeed, by the voluminous work being produced on this and related topics, I think it accurate to say that the study of the economics of higher education has come of age. This, of course, wasn't always so. Economists for too long treated such topics with "benign neglect." Since Teichler makes much of the connection between social reality and research emphasis, I would be interested in his explanation of the tardy development of this area of research. Were the differences in social policy and reality in say, 1960 compared to 1950 sufficiently decisive to explain the dearth of research on the economics of higher education in the earlier year and the enormous research efforts on the same subject one decade later? This and similar questions must be resolved if we are to truly comprehend how research priorities are set.

In any event, the hypothesis stated by Teichler, at the outset, namely, that there is a close and meaningful two way relationship between social situations, policy and reality in any country on the one hand and its research efforts on the other hand, is interesting and rich with implications. Although the evidence on this point in the paper may not be conclusive or all encompassing, it is suggestive and worthy of further investigation.

I would, however, direct anyone interested in this general theme to the 1972 publication by the National Bureau of Economic Research on Human Resources which is based on a colloquium held on that subject with the central paper being presented by Theodore Schultz.¹ In the course of his excellent survey of the field of human resources research, Schultz provides an explanation of the supply and demand factors that determine the nature of economic research. As I read both Teichler and Schultz, Teichler is putting emphasis on one portion of the demand side for economic research, namely, research need that arise from social policy and social situations. Although Schultz goes into great detail on both the supply and demand sides, much more is necessary if we are to demonstrate how an equilibrium position is achieved in regard to the quantity and types of economic research that are undertaken. The question of the stability and dynamic factors in general association with such equilibria should also be investigated.

Another aspect which needs to be explored is the influence of cobwebs and lags in general. Even if we accept that there is a significant

¹National Bureau of Economic Research, Human Capital, New York, Columbia University Press, 1972.

relationship between the social situation in a country and the state of research, an important question is the time it takes for one factor to react to the other. Knowledge of the approximate response lag would better enable us to test the basic hypothesis. It is even possible that such knowledge would resolve the question I raised earlier as to why research into the economics of higher education had its take-off in the 1960's and not in some other decade.

Moreover, in certain areas of research we find periods of intense activity which then seem to be followed by relative inactivity only to be followed again by renewed research interest etc. What occurs sometimes is that concern with a certain research area may lead to a spate of such studies thus swelling the results in that sector while relatively ignoring other areas. Eventually this leads to a correction or more precisely to an overcorrection so that the once popular research area is forsaken and other areas are more heavily researched. This, in turn, leads to a dearth of new results in the once popular but now abandoned research area leading again to a renewed interest in it at a later date. In short cobwebs often do operate. The great fluctuations in the study of distribution theory -- whether functional or size -- that characterize the history of economic thought may, for example, have something to do with such cobwebs.

Let me now turn to another interesting point touched upon in the paper. Teichler attempts to avoid the troublesome question of defining what is true "higher education" by adopting its present day definition. While I understand his reluctance to get involved in a potentially thorny problem, as a discussant I enjoy the luxury of bringing up thorny problems. It is my view that the time has come to deflate what we generally call "higher education" by a secular trend factor. There is, I believe, a compelling reason to do this. In 1940 the 3rd quartile figure for educational attainment of male whites of age 25-34 was 12.5 years, while in 1974 the same measure was at 16.0.² Thus in 1974, 3/4 of all white males between the ages 25-34 had completed the equivalent of what we still call "higher education." Especially in a world where the effects of education are to a large degree comparative or relative, it is necessary to change our way of thinking. Perhaps we should call the college years tertiary education to distinguish them from the years of secondary education. Higher education could then be reserved for any schooling beyond the undergraduate level. This is not merely a matter of semantics but a question of what our expectations from comparative educational attainments are.

My comments on the remainder of the paper will take the form of a plea for further investigations.

The discussion in Section 4 about the West German-U.S. differences in the concept of higher education as specialized preparation in the former country and development of generalized skills in the latter country is enlightening. What is, however, left largely unanswered is how do graduates of the specialized education in West Germany do in the labor market relative to U.S. graduates. If there are no studies that enable us to answer this very important and timely question, then it seems to me that we have a golden opportunity to get the answers by some comparative analysis.

In Section 5 (P.46) we are given the finding that in West Germany, workers with lower level educational attainment have a better chance of reaching higher positions in the private sector than in the public

²U.S. Bureau of the Census, Current Population Reports - Population Characteristics Series P. 20, No. 274, Table 13, P. 4.

sector. This is intriguing and begs for an explanation. One possible explanation is that in the public sector it is much more difficult to measure productivity so that education is used to a greater degree in the public sector as a substitute for accomplishment and efficiency on the job. If this is so, a whole set of implications concerning the true economic value of higher education follows. If it is not so, then what is the explanation? Moreover, what is the situation in the U.S.?

The conclusion stated at the end of Section 7 (P. 54) that in West Germany differences in quality among institutions of higher education whose status is formally equal have had limited bearing on a graduate's chances on the labor market is difficult to reconcile in light of the emphasis on the specialized training of universities for specific jobs. Wouldn't it be irrational for an entrepreneur to be indifferent between two graduates one of whom has received his specialized training from a higher quality institution? Doesn't this higher quality translate into better specialized training in West Germany?

Finally, I would have liked to see some discussion of the relative effects in West Germany and the U.S. of older students returning to school and of the phenomenon of the part time college student.

Nonetheless, Professor Teichler is to be commended for amassing together in one place a veritable wealth of sources on a host of sub-topics, all of which are immensely interesting and vitally relevant.

INSTITUTIONAL COSTS IN
AMERICAN HIGHER EDUCATION:
Past Trends and
Future Prospects

Howard Bowen

In recent years I have been trying to learn about the costs and benefits of the American system of higher education. On the one hand, I have been trying to identify the individual and social outcomes of our colleges and universities and thus to answer the question: Is American higher education worth what it costs? On the other hand, I have been investigating costs in order to answer the question: What level of costs are necessary, or warranted, to support American higher education at a satisfactory level of quality?

The part of the study relating to outcomes has recently appeared as a book, Investment in Learning in which I tried to marshal the evidence about the outcomes in the form of changes in individuals, changes in society, and various other benefits. The main conclusion of this book was that the outcomes of higher education are a multitude of small and often subtle effects which, in the aggregate, are indeed worth what they cost. The line of argument was that education probably pays for itself in narrow economic terms by its effect on individual and social productivity, that in addition it yields benefits of great value in the personal development of its students and in their performance as citizens and members of families, that it is a valuable consumer good in its own right, and that it makes invaluable contributions to the preservation of the cultural heritage, to the advancement of the knowledge and culture and to public policy. In all, its value may be two or three times its cost. These guesses, however, were formulated in terms of total cost and benefit and not in terms of marginal cost and benefit. When considering whether the higher educational system should be expanded, I found myself resorting to moral rather than economic arguments -- quite properly, I think.

Now, I am trying to look more carefully at the cost side of the cost-benefit equation. Higher education could be well worth what it costs and yet the costs might be excessive in the same sense that the same (or only slightly diminished) results might be achieved at lesser cost. I became especially interested in the cost side because of the alleged difficulty of higher education as a whole to achieve gains in productivity and partly by the obvious fact that different institutions with approximately the same missions and comparable qualitative results operate with vastly different unit costs. For example, one of the

Carnegie Commission reports (New Students and New Places, 1971, pp. 65-85) found enormous variations in cost per student for comparable institutions. For example, for selective liberal arts colleges, which are a very homogeneous group, they found the range of cost per student from \$900 to \$5,900 and the difference between the first and third quartiles was \$1,000 per student. Similarly, Gordon Douglass and I found (Efficiency in Liberal Education, 1971) that fairly modest changes in modes of instruction would produce great changes in cost without any obvious changes in outcomes. The basic economic law of higher education appears to be that each institution raises all the money it can and spends it all. The inference from this proposition is that unit cost is a function of revenues and not of the necessary outlays for delivering education at acceptable levels of quality. Moreover, within wide limits, the connection between cost and results is at best tenuous and uncertain.

My cost study is in its first year and I have not traversed all the territory. In particular I have not yet been able to deal with the intriguing question of institutional cost differences beyond collecting some of the data for the purpose. But I have studied long-term trends in costs to see if I could detect any changes in productivity over time. I have explored the area of "socially-imposed costs" to determine the extent of new costs that have been thrust upon higher education by affirmative action, open admission, ERLISA, OSHA, increases in Social Security taxes, etc. But I have devoted most of my time to the study of faculty and staff compensation. I gave this highest priority because about two-thirds to three-fourths of all the institutional costs of higher education are wages, salaries, and fringe benefits for faculty, administrators, other professionals, and general service workers. I shall devote most of my remarks today to faculty and staff remuneration.

Before going into that subject, however, let me comment briefly on long-term cost trends in American higher education. It has long been accepted doctrine that higher education fails to achieve significant improvements in efficiency, and that its costs therefore inexorably rise from year to year. I have recently made some statistical explorations that have raised questions, in my mind at least, about this belief. My procedure was to explore the relationship between the expenditures of the higher educational system and the work load.

I defined expenditures as current outlays plus capital outlays for educational and general purposes -- excluding expenditures for auxiliary enterprises and student aid. The included expenditures were then deflated using three quite different indexes. To deflate data on current expenditures, a Higher Education Price Index and the familiar Consumer Price Index were used. The Higher Education Price Index is based on the prices of the goods and services purchased by higher educational institutions. Since about two-thirds to three-fourths of the expenditures consist of wages and salaries, this index is dominated by the rates of pay received by academic workers and fluctuates according to changes in academic compensation. The Consumer Price Index, on the other hand, is based on the prices of final products and reflects changes in the general level of costs. In other words, the Higher Education Price Index reflects changes in the specific costs within the higher educational industry and the Consumer Price Index represents changes in the opportunity costs. Both indexes seemed to me to have relevance and so I used both in parallel calculations. Capital expenditures were deflated using an index of construction and equipment

prices. The expenditure data are shown in Table 1 by decades over the period since 1929-30. The deflated expenditures were then divided between instruction and research with overhead costs allocated to each. Research was defined to include separately organized research; departmental research was included within instruction because it was construed to be complementary to and supportive of instruction and therefore a necessary cost of teaching students. Also, extension and public service were included in instruction because they are mainly educational activities. The result of these adjustments was two series of statistics on expenditures for instruction and research, each series deflated by using a different index (see Table 1).

The next step was to calculate the student load over the period from 1929-30. Using official data, a series on the number of full-time-equivalent students was derived. Over the years, however, the relative numbers of graduate, upper division undergraduate, and lower division undergraduate students changed. So, I adjusted the basic enrollment figures to take this change into account. The result was two series of statistics relating to teaching load as shown in Table 1.

I then computed instructional expenditures per student using each of the two deflated series of expenditures and each of the two series on student loads. The results are shown in Table 2. What emerges from these calculations is not that higher educational unit costs have risen inexorably year after year, but rather that over long periods they have held steady or declined. This was true during the period 1929-30 to 1949-50, and also in the current decade of the 1970s. Only in the golden years of the 1950s and 1960s did unit costs go up, and they rose during this period precisely because society was willing to pour rapidly increasing resources into the higher educational enterprise.

As another check on these findings, I calculated the student-faculty ratio over the period since 1929, using two measures of the student load. I found that this ratio has tended to rise over time except for one sharp reversal during the prosperous period around 1959-60.

My conclusion from these calculations is that, except during the period of the 1950s and 1960s when the level of higher educational expenditures was raised to a new plateau, unit costs in higher education have tended to hold steady or to decline. This finding seems to me to be inconsistent with the theory that higher educational costs inevitably rise and that the higher educational industry is incapable of improvements in efficiency.

The trend of unit costs in higher education, however, is powerfully influenced by levels of faculty and staff compensation. What appears to be an improvement of productivity as reflected in a reduction of unit cost may be simply a decline in real wages; and conversely what seems to be a deterioration of productivity may be an increase in real wages. So let me turn now to the question of faculty and staff compensation in higher education.

Long-term Trends in the Pay of Academic People

I shall begin by reviewing the historic trends in the remuneration of faculty and administrators since the turn of the century. This review gives some insight into the effects of inflation and also into factors governing the trend of academic pay.

Apparently, the beginning of World War II was a critical turning point in the behavior of academic salaries. The record prior to World

War II may be summarized as follows (see Table 4): (a) during periods of orderly economic growth and stable prices, compensation in constant dollars increased at the rate of 1.0 to 1.5 per cent a year; (b) during periods of rapid inflation, of which there were two, compensation in constant dollars declined sharply at the rate of about 5 per cent a year; (c) over the whole pre-war period from 1904 to 1943, the average annual increase was 0.5 per cent a year. This pattern seemed to change around the beginning of World War II: (a) In the one period of orderly economic growth and reasonably stable prices (1951-52 to 1969-70), compensation in constant dollars increased by about 3.6 per cent a year -- as compared with 1.0 to 1.5 per cent in comparable pre-war periods; (b) In the three periods of rapid inflation (1942-43 to 1945-46 to 1951-52, and 1961-70 to 1976-77), compensation did not decline drastically in the pre-war manner: for example, during the period of acute inflation beginning in 1969-70 compensation declined only at a rate of one-third of one per cent a year. Clearly, something changed around the beginning of World War II. Since then, during periods of economic stability and growth, the rate of increase in compensation has been greater than formerly; and since then, inflation has not triggered serious setbacks in compensation as it did before.

The explanation undoubtedly lies in a marked change in public attitudes toward higher education. Around the time of World War II, college attendance began to be seen not merely as a privilege for a small minority but as opportunity for the masses of youth. Moreover, from the events of the Great Depression and World War II, the nation was gaining a new appreciation of higher education as a source of economic productivity and national power. These attitudes led to adoption of the G.I. Bill and in turn they were greatly reinforced by the striking success of that law. Later, the dramatic launching of Sputnik and the reports that began to filter in about educational achievements in the USSR also strengthened public concern for higher education. Corporations and government gained increasing appreciation of the returns from research and development and of the need for educated people in managerial and technical work. Moreover, in the early 1950s, it became generally clear that the college-age population would expand greatly in the 1960s and 1970s and that higher education would have to operate at dramatically higher levels. In this atmosphere, it was widely recognized that faculty and administrators had suffered from neglect and that compensation needed to be raised if the academic profession were to attract and hold adequate talent. In the climate of the time, the financing necessary to improving compensation became available. Parents were becoming more interested in higher education and more willing to pay tuitions. Private donors and foundations were becoming increasingly generous in support of higher education; state legislators were expanding appropriations; and the federal government entered the field with increasing determination and more money. Meanwhile the leadership of the colleges and universities themselves had become increasingly sensitive to the need for higher compensation to retain capable faculty members and administrators and to recruit new people into academic positions.

Though support of higher education had been gathering steam since 1942, the effect of new attitudes and initiatives became manifest around 1951-52. Beginning in that year, compensation (in constant dollars) increased at an average rate of 3.5 per cent a year and continued at that rate until around 1969-70 when rapid inflation set in. But even after 1969-70, the efforts of the colleges and universities backed

up by public concern for the academic enterprise were sufficient to maintain constant-dollar compensation at about the 1969-70 level and to prevent inflation from eroding the gains of previous years. Indeed, much of the financial stress among institutions of higher education since 1969-70 has been due to the determined effort of colleges and universities to keep faculty and administrative compensation at least in pace with inflation and to avoid the kind of slippage that had occurred in pre-war periods of inflation. Maintaining compensation has had priority over other needs and has undoubtedly slowed institutional progress in other respects.

The basic trend in faculty and administrative salaries has been more closely linked to public attitudes about the value of higher education than to market demand as indicated by enrollments or to market supply as indicated by numbers of new Ph.D.s. The turning point in the rate of growth of compensation occurred around 1942-43 precisely when enrollments were declining at the onset of World War II. The acceleration of this growth around 1951-52 coincided exactly with an enrollment trough following the departure of the GIs and preceding the arrival of the post-war baby generation. Moreover, there has been no drastic decline in compensation since 1969-70 despite a slowing of the growth in enrollment and a rapidly increasing supply of persons qualified for college teaching.

Comparative Trends in Compensation

The next step in the analysis was to compare trends in compensation of faculty and administrators in higher education with trends for other elements of the national labor force. For this purpose, a mass of data on earning of various groups was assembled and analyzed.* The findings from these comparisons may be briefly summarized (see Table 5):

1904-1930. The rate of growth of academic pay was substantially lower than that for almost all other occupational groups for which data were available. One exception was federal civilian employees. Whereas faculty pay increased during this period at the annual rate of 3.19 per cent a year, the pay of most other groups increased by annual percentages averaging from 3.50 to 6.21 per cent. The percentage for all civilian full-time employees in all occupations was 4.17.

*These data were all expressed in current dollars as there was no need to deflate when comparing different groups faced with similar cost of living. The comparisons were made using annual average rates of increase in salaries or compensations over the period 1904-1930, 1939-1952, 1952-1961, 1961-1970, and 1970-1975. Among the groups with which faculty were compared were:

- All civilian full-time employees
- Full-time employees in manufacturing
- Domestic airline employees
- Telephone and telegraph employees
- Unionized workers in building trades, printing trades, and trucking
- Workers paid the legal minimum wage
- Executive and supervisory employees of large companies
- Employees of the federal government
- State and local government employees
- Non-salaried professional practitioners

1930-1952. The relative progress of academic pay was even less good in this period than in the years 1904-1930. Academic pay was increasing at the rate of slightly over 2 per cent a year. The rate of increase in compensation for all civilian employees was 4.42 per cent. In view of these disparities, it is little wonder that academic people were discouraged in the early 1950s, and that the inadequacy of academic salaries was widely acknowledged at that time.

1952-1961. The situation changed abruptly in this period. It was the time of Sputnik, the new appreciation of science and learning as major ingredients of national economic growth and power, and the dramatic Ford Foundation faculty salary grants. It was also the time of the recognition that higher education should be extended to a larger percentage of the relevant age groups, and the expectation that the post-war baby boom would soon materialize in a horde of 18-year-olds ready for college. Improvement of academic salaries became a major national objective. Under these conditions, faculty salaries rose by 5.21 per cent a year and faculty compensation rose even more, by 5.41 per cent a year, indicating the growing importance of fringe supplements. The rates of increase for other groups ranged mostly from 2 3/4 per cent to 5 per cent, the figure for all civilian employees being 4.46 per cent. Only a few groups received raises larger than those in higher education. Among these groups were state and local government employees, lawyers, physicians, engineers, and members of Congress. But, clearly, academic people were near the head of the pack in the annual rate of pay raises.

1961-1970. The situation was mixed but the gains in higher education were ahead of those for workers in most other occupations and industries. In this period, the compensation of academic faculty and staff increased by 6.03 per cent as compared with 5.23 per cent for compensation of all civilian full-time employees. The comparative growth of compensation in higher education was somewhat slower than in the preceding period but it could not be said that higher education was falling behind.

1970-1975. The situation changed drastically. The rate of increase in academic compensation was substantially below that of most other groups. The average annual increase in compensation was 6.01 per cent as compared with 8.07 per cent for all civilian full-time employees. It is well known that no improvement in the relative position of higher education has occurred since 1975.

Conclusions. When all the periods are combined, and comparisons made for the entire period 1904 to 1975, it becomes clear that the periods of relative academic prosperity during 1952-61 and 1961-70 were not sufficient to offset the loss of ground in the less prosperous periods of 1904-30, 1930-52, and 1970-75. Over the nearly three-quarters of a century from 1904, faculty compensation increased on the average at the rate of 3.71 per cent a year, whereas compensation of all civilian full-time employees increased at the average rate of 4.69 per cent, a difference of about 1 percentage point a year. The comparability of the data over such a long period may, however, be in question and conclusions about relative progress in rates of pay must be accepted with caution. However, in the most recent period -- 1970-75 -- which is of the greatest interest, compensation in higher education, though it has nearly kept up with inflation, has clearly not been keeping pace with compensation in the rest of the economy.

Comparative Compensation in 1976-77

In comparing the compensation of academic people with that of other

groups of workers, the actual contemporary situation is perhaps more significant than past trends. How are faculty, administrators, and general service workers paid today relative to persons in other industries and occupations?

As compared with the rank and file of American workers, faculty and administrators in higher education are relatively highly paid (see Table 6). Their average annual compensation is in the range of \$20,000 to \$30,000, depending on the nature of their work and the length of their annual contracts. In contrast, the average compensation of all civilian workers is \$13,000; of public elementary and secondary teachers \$12,800; and of all federal civilian workers on the Civil Service General Schedule \$16,700.

When academic people are compared with persons occupying comparable positions in other industries, however, the situation is mixed (see Table 7, 8, and 9). In general, faculty salaries for 11-12 months appointees, though on the whole considerably lower than those in business and perhaps a bit lower than those in the federal government, are relatively good. The disparities ranging from 0 to 20 per cent are not shockingly great. Indeed, the compensation of top professors on calendar-year contracts compares quite favorably with that of second-level managers and administrators in private business and with top engineers, actuaries, and other professional persons employed in business and government. The position of the majority of faculty who are on 9-10 months appointments, however, is not so favorable. If they are regarded as year-round workers who happen to be paid on an archaic 9-10 months' basis, they are clearly underpaid as compared to persons doing comparable work in the federal government and in business. On the other hand, if they are regarded as part-time employees, then their rate of pay can be construed to be about as good as that of colleagues who are on 11-12 months appointments, and their relative position is not so bad. The salaries of administrators in higher education, however, are drastically lower than those in business even for comparable jobs in organizations of similar size (Table 10) and the wages of physical plant workers in higher education are about 10 per cent lower than those for comparable employees in business.

Non-monetary Benefits and Outside Earnings

Before reaching conclusions about relative earnings in higher education and those in other industries, non-monetary benefits and outside earnings must be taken into account. These are modest for most academic administrators and general service employees, significant for faculty on 11-12 months contract, and substantial for faculty on 9-10 months contracts.

The non-monetary benefits include the following (those marked with an asterisk are often available to administrators and general service workers as well as to faculty):

- Tuition remission for faculty members and their families*

- Access to sports facilities such as golf courses, tennis courts, gymnasium*

- Membership in a collegial academic community and in the "company of scholars"

- Tenure

- Freedom and flexibility in the use of time

- Long vacations and leaves

- Subsidized housing.

Many other minor benefits available to some academic people could be

mentioned. This array of non-monetary benefits is not necessarily by different people but almost certainly is of sufficient value to most academic people to offset part of the pay of persons in other occupations. In addition to these non-monetary benefits, faculty members usually have the opportunity for home or living vacations, but even in regular working time (though for administrators and general service workers this opportunity is much more restricted). The main sources of these outside earnings are summer or part-time teaching, consulting, research, private practice fees, royalties from inventions, royalties from writing, sale of works of art, lecture fees, and miscellaneous "moonlighting." According to one study, outside income is earned by 74 per cent of faculty members on academic-year appointments and by 51 per cent of those on calendar year appointments.² In the aggregate, outside earnings amounted to 19 per cent of base salaries for those on 9-10 months appointments and 11 per cent for those on 11-12 months appointments. These earnings are not distributed equitably among all the ranks or among all the disciplines, but in total they are substantial and go a long way to offset disparities between academic people and their counterparts in other vineyards.

The augmentation of compensation by substantial non-monetary benefits and outside income places faculty in a strong position relative to comparable workers in other industries. Faculty on 11-12 months appointments may be better off than their counterparts in business and government when non-monetary benefits and outside earnings averaging 11 per cent of base salary are taken into account. Similarly the overall position of faculty on 9-10 months appointments may be comparatively good when the non-monetary advantages and outside earnings averaging 19 per cent of base salary are considered. Another indication that faculty remuneration may be not too far out of line is the notable absence of any rush to leave the profession or any shortage of young people who are willing to enter when jobs can be found. But, it must be remembered, the position of administrators and general service workers is not significantly improved by the inclusion of non-monetary benefits and outside income.

Future Policy: Faculty Compensation

History has shown that the level of faculty compensation has not been determined solely by the spontaneous forces of the market, but has been heavily influenced by conscious public attitudes and conscious policy toward higher education. This was demonstrated by the conscious effort to raise faculty compensation in the early 1950s. At that time, there was a wave of public recognition that higher education is a critical ingredient of societal welfare and progress and widespread realizations that compensation was too low to attract to the profession people of appropriate talents. The result was a determined effort by those supplying the funds and by the leaders of the institutions to make faculty compensation competitive with that of talented people in other industries and occupations. This effort succeeded and by the late 1960s the position of faculty was almost certainly equal or superior to

²Ralph E. Dunham and others, Teaching Faculty in Universities and Colleges. Washington: U.S. Department of Health, Education, and Welfare, 1963. See also: Alan E. Bayer, Teaching Faculty in Academia: 1972-73. Washington: American Council on Education, 1973.

Refers to four-year institutions only.

... of course, the government's job, elsewhere, has to be done: supply of goods, people, and money, and so on. The economy, in short, has to be kept going. But, from that time, however, public attitudes toward higher education changed. Student unrest, rising costs, competition in the job market for graduates, the shift of public attention toward competing priorities, and need to control inflation all contributed to this change. Today these conditions, the institutions faced a gradual but persistent financial squeeze, and faculty compensation began slowly to lose ground as compared with the pay of workers in other industries and occupations. Nevertheless, colleges and universities almost uniformly continued to place high priority on faculty compensation, often at the sacrifice of plant maintenance, student services, new programs, financial reserves, and general institutional advancement. As a result, faculty compensation on the whole nearly kept pace with inflation even if it did not stay abreast of the wages and salaries of other groups who received productivity increases in addition to cost of living increases. This record is in sharp contrast to that before World War II when episodes of inflation were uniformly accompanied by sharp declines in the "real" earnings of faculty after allowance for increases in the price level. In spite of great efforts, however, faculty have been slowly losing ground in recent years relative to other groups -- though the relative economic position of faculty today is relatively good, especially when non-monetary benefits and outside earnings are taken into account.

The policy question is: What should be done in the years ahead about faculty compensation? Or, to phrase it differently, what trend of compensation will be in the broad public interest? This question is posed at a time when the market for faculty is decidedly weak.

There are three plausible policy options:

1. To continue the present trend. Faculty compensation would nearly keep pace with the cost of living but would increase at a slower rate than average compensation in the rest of the economy.
2. To increase the rate of growth of faculty compensation to keep pace with earnings in the rest of the economy. This would call for increases of perhaps 8 per cent a year as compared with recent increases averaging about 6 per cent a year.
3. To lower the priority now attached to faculty compensation in favor of other priorities (either inside or outside higher education). The rate of growth of faculty compensation would then be slowed up to take advantage of the undoubted market weakness of the academic profession. In this scenario, faculty compensation in real terms would almost certainly fall absolutely as well as relatively.

Clearly, the temptation for institutions to adopt the third option is very great and could become greater if the financial squeeze should worsen. From the point of view of those who supply the finances, the temptation is also great to force salaries down by withholding the money to pay the salaries. Indeed, it would be possible, in the short run at least, to "solve" the financial problems of higher education simply by slowing up the rate of growth of faculty compensation, for example, by placing a freeze on faculty salaries or even by imposing cuts. Under the circumstances, it is remarkable that this temptation has been so widely resisted. One must ask the question, not why has faculty compensation failed to keep pace with pay in other industries and occupations, but why has faculty compensation fared so well in view of its past history and in view of the present weak market situation?

greater and the problem of securing competent people will be compounded. If there is enrollment growth, as is possible in the 1980s and likely in the 1990s, the recruitment problem will be still further complicated. It is one thing to say that all available faculty positions could be filled at lower relative compensation than now obtains, but they probably could not be filled with people at the level of competence of those recently recruited. Indeed, the present level of competence in the profession is none too high considering the critical importance of higher education. The third option, that is, drastically lowering the compensation of faculty relative to that in other industries and occupations, is almost surely not in the public interest.

The first option, namely, to allow the present trend to continue, is one of slow attrition rather than sharp cuts. Faculty compensation has been increasing at the rate of about 6.0 per cent a year, whereas the compensation of all civilian employees has been growing at the rate of about 3.0 per cent a year (table 5). The difference, which represents the rate of attrition for faculty, is about 2 percentage points a year. Over a decade the effect would be substantial, and over two decades it would be catastrophic. It would eventually put faculty back in the weak position they experienced just before World War II. Slow attrition would of course be preferable to drastic cutting, but it is not a recommended solution for the long run.

This leaves only the second option which is to raise the annual rate of faculty compensation so that it approaches or matches the average rate for workers in other industries and occupations. To achieve this objective higher education would either need more money or it would have to achieve cost-cutting improvements in efficiency, one obvious possibility being the lowering of the faculty-student ratio.

The opportunities for improvements in efficiency, that is, for cost-cutting without unduly impairing outcomes, are not as great as is often alleged by critics of higher education. The higher educational community has already achieved substantial reductions in real costs under the pressure of the financial squeeze of the past eight or nine years. Indeed, a major purpose of these economies has been to minimize salary cuts. The result of this cost-cutting has been undermaintenance of plant and some reduction in quality of services. Moreover, economies such as these can only be instituted once. For example, if the standard of building maintenance, the quality of the food service, or the rate of library acquisitions is cut in 1978, those savings may be continued from year to year, but additional savings will require new cuts in 1979, again in 1980, etc. As the cutting goes on, to find new objects of economy becomes harder and harder. Moreover the outcomes of higher education have probably already begun to deteriorate partly because of curtailment of services and partly because of inability to finance innovation and institutional development in response to changing conditions. Despite all the efforts to economize and the sacrifices they have entailed, these efforts have not been sufficient to allow faculty compensation to keep pace with earnings in other occupations. This lag in the growth of salaries has weakened the relative attractiveness of the academic profession and has impaired faculty morale.

If the rate of increase in faculty compensation continues to lag significantly behind pay raises in other occupations, the position of higher education will deteriorate badly. As has been shown, the current relative position of faculty even after several years of failing to keep pace with other occupations is not bad. But if the disparity of two percentage points in annual rate of increase (6 per cent for

faculty vs 8 per cent for other occupations) continues, in ten years faculty compensation will be 20 per cent below that of other occupations and in twenty years, 40 per cent below. At some point fairly soon the present disparity must be corrected. This will require an increased flow of funds into higher education. Potential improvements in efficiency will not and cannot be adequate to bridge the gap without socially unacceptable impairment of quality. The correct national policy, in my judgment, is to deal with the problem over a period of years. For example, the gap in average annual increases might be reduced from the present 2 percentage points to 1 percentage point in 3 years and the gap might be further narrowed until it was eliminated in 5 years. This time-table would eventually bring about parity in rates of growth but relative levels of compensation would be considerably less favorable for faculty than at present.

Perhaps a word is in order about non-monetary income and outside earnings of faculty. If growth in faculty compensation could be kept closer to parity with the rest of the labor force, many of the privileges and perquisites might be curtailed. Many of them were instituted at a time when faculty were grossly underpaid. But as we are now again moving away from parity, the justification for these various items of non-monetary income increases apace. The same holds for outside earnings. But the case for outside earnings on a fairly generous basis is even stronger. The opportunity to earn outside income encourages faculty members to take part in the affairs of the world, to gain practical experience in their professional fields, and to become proficient in their disciplines. This opportunity also offers a special incentive to ambitious persons because it provides the chance within the academic profession to earn substantial amounts and even in some cases to get rich. In other words, it removes the ceiling on earnings that are possible within the academic world, and thus strengthens incentives for adventurous and imaginative people to enter the profession. Moreover, outside work is an antidote to the boredom that afflicts many faculty people in mid-career. There are of course disadvantages in the opportunity for outside earnings. Some faculty neglect their academic duties, some lose their loyalty to their institution, some misuse their status as academic people when operating in the public arena. But on the whole, the opportunity for outside earnings is socially advantageous. It tends to narrow the gap between academic compensation and earnings in other occupations in a way that is mainly constructive.

Compensation of Administrators and General Service Workers

The earnings of academic administrators are reasonably comparable with those of administrators in hospitals and government but far below those of business executives in comparable jobs within organizations of similar size. For instance, the earnings of presidents or chancellors of colleges and universities are less than half those of chief executive officers in private business; the salaries of admissions and development officers -- the "sales" executives of higher education -- are far below those of sales managers in industry, and so on down the whole roster of administrative officers. I see no reason to believe that the administration of a college or university is any less difficult or entails any less responsibility than the management of a company of similar size. Under these circumstances, the questions must be posed: Would colleges and universities be more successful over a period of time if they paid higher salaries to their administrators? Would they attract and hold more capable and better prepared people? Would these people perform

with greater energy and dedication? Would the higher costs be returned in greater efficiency and in greater income? One can of course argue that higher education attracts many very capable and dedicated administrators at existing salary levels. One may suspect also that higher salaries for administrators might merely attract people who are interested in money and lacking in dedication. However, my opinion is that on balance a gradual up-grading of administrative salaries, on a highly selective basis, would be sound policy for higher education. Such a policy would, however, probably meet with strong opposition from faculty.

On the basis of limited data, I found that the wages and salaries of general service workers are probably around 10 per cent below those for comparable jobs in private business. Some or all of this differential may be justified by relatively pleasant working conditions and steady employment in colleges and universities. But there is little evidence to suggest that general service workers in higher education are overpaid.

Conclusion

The major item of cost in institutions of higher education is the compensation of faculty and staff. Faculty compensation (including non-monetary income and outside earnings), relative to earnings in other occupations and industries, is reasonably good as of 1976-77. Administrative compensation is probably comparable to that in government or hospitals but far less than in business. The compensation of general service workers is probably lower in higher education than in other parts of the economy. Faculty and administrative compensation is slipping relative to trends in other industries and occupations. The slow relative attrition of compensation in higher education threatens to impair its future soundness. Policies are needed to bring about reasonable parity between the rates of growth in compensation in higher education and growth rates in other occupations and industries.

Currently the salary goals of most institutions are (1) to keep up with other academic institutions, and (2) to keep pace with the cost of living. These goals are not adequate for the future soundness of American higher education. Instead, the goal should be to keep pace with the growth of compensation in the economy generally. Institutions should begin routinely to relate their salary increases to those of the economy, not merely to those of other colleges or universities or to the cost of living.

Table 1

Teaching Load and Expenditures for Research and Instruction, All U.S. Institutions of Higher Education, by Decades
— 1929-30 to 1977-78.

	1929-30	1939-40	1949-50	1959-60	1969-70	1977-78
Expenditures for instruction and research						
Total in millions of current dollars ¹	481	590	2,031	5,605	20,562	41,771
Total in millions of constant 1967 dollars deflated using the Consumer Price Index ²	1,097	1,480	2,908	6,453	18,067	21,917
For research ³	78	108	540	1,982	4,587	4,277
For instruction	1,019	1,372	2,368	4,471	13,480	17,640
In millions of constant 1967 dollars deflated using Higher Education Price Index ⁴	1,471	1,899	3,858	7,286	17,086	20,585
For research ³	104	139	716	2,238	4,338	4,017
For instruction ³	1,367	1,760	3,142	5,048	12,748	16,568
Teaching load (in thousands)⁵						
Number of f.t.e. students unadjusted	890	1,202	2,145	2,775	6,319	8,560
Number of f.t.e. student adjusted for change in mix of students by level of studies	1,127	1,570	2,876	3,756	8,822	11,855

¹Total educational and general expenditures plus capital expenditures. The basic source was official statistics of U.S. Department of Health, Education, and Welfare with adjustments by the author for continuous comparability. See U.S. Bureau of the Census, Historical Statistics of the United States, Vol. I, p. 384-85 and National Center for Education Statistics, U.S. Department of HEW, Digest of Education Statistics, 1976 edition, pp. 141-142.

²Deflated using Consumer Price Index of U.S. Bureau of Labor Statistics for educational and general expenditures and an Index of Construction and Equipment Prices for Capital Expenditures. The latter index was derived for 1929-30 to 1963-64 from June O'Neill, Resource Use in Higher Education, 1971, p. 91; for 1964-65 to 1973-74 from D. Kent Halstead, Higher Education Prices and Price Indexes, U.S. Department of HEW, Office of Education, 1975, p. 9 and 1976, p. 10 and Chronicle of Higher Education, September 6, 1977, p. 13; for 1974-75 to 1977-78 from Boeckh Index of Construction Cost of Apartments, Hotels, and Office Buildings, see Survey of Current Business monthly issues, p. S10.

³The allocation between instruction and research was accomplished as follows: (a) instruction and departmental research, "extension and public service," and "related activities" were assigned to instruction; (b) separate y

organized research was assigned to research; (c) "general administration and general expense," "libraries," and "plant operation and maintenance" were divided between instruction and research in proportion to expenditures for (a) and (b).

⁴Deflated using Higher Education Price Index derived for 1929-30 to 1961-62 from O'Neill (op.cit.) p. 81, for 1963-64 to 1976-77, from Halstead (op. cit.) p. 10, and from Chronicle of Higher Education (op. cit.) p. 13.

⁵Estimated by the author using data found in many publications of the U.S. Office of Education and the National Center for Education Statistics.

Table 2

Expenditures Per Full-time-Equivalent Student, All U.S. Institutions of Higher Education, by Decades -- 1929-30 to 1977-78¹

	1929-30	1939-40	1949-50	1959-60	1969-70	1977-78	Average annual percentage increase 1929-30 to 1977-78
Expenditure per f.t.e. student (deflated using Consumer Price Index)							
Number of students unadjusted	1,145	1,141	1,104	1,611	2,133	2,061	1.23%
Number of students adjusted for changes in mix of students by level of studies	904	874	823	1,190	1,528	1,488	1.04
Expenditure per f.t.e. student (deflated using Higher Education Price Index)							
Number of students unadjusted	1,536	1,464	1,465	1,819	2,017	1,936	0.48
Number of students adjusted for changes in mix of students by level of studies	1,213	1,121	1,092	1,344	1,445	1,398	0.30

¹Computed from data in Table 1.

Table 3

Student-Faculty ratios, All U.S. Institutions of Higher Education, by Decades, 1929-30 to 1977-78.

	1929-30	1939-40	1949-50	1959-60	1969-70	1977-78
Full-time equivalent students (in thousands)						
Number unadjusted ¹	890	1,202	2,845	2,775	6,319	8,560
Number adjusted for changes in the mix of students by level of studies ¹	1,127	1,570	2,876	3,756	8,822	11,855
Full-time-equivalent faculty ² (in thousands)	66	89	152	229	477	599
Ratio of students to faculty						
Number of students unadjusted	13.5	13.5	14.1	12.1	13.3	14.3
Number of students adjusted for changes in the mix of students by level of studies	17.1	17.6	18.9	16.4	18.5	19.8

¹From Table 1.²Estimated by the author using data from National Center for Education Statistics. See Digest of Education Statistics to 1985-86, pp. 55-57; Historical Statistics of the United States, Vol. I, pp. 382-83.

Table 4

Average Annual Increases in Faculty Compensation¹

1904-1943	1943-1977		
Periods of orderly economic growth and stable prices.			
1903-04 to 1913-14	1.09%	1951-52 to 1969-70	3.61%
1922-23 to 1929-30	1.42		
1934-35 to 1939-40	1.45		
Periods of rapid inflation.			
1913-14 to 1919-20	-5.29%	1942-43 to 1945-46	2.95
1939-40 to 1942-43	-4.93	1945-46 to 1951-52	-0.91
		1969-70 to 1976-77	-0.33

¹Estimated by the author using data from AAUP, National Education Association, National Center for Education Statistics, Historical Statistics of the United States, Vol. I, pp. 175-176; W. R. Bokelman and others, A Half Century of Salaries at Land-Grant Institutions, U.S. Office of Education, 1962.

Table 5

Comparative Trends in Compensation: Faculty and all Civilian Employees. (average annual percentage increases)

Period	Faculty ¹	All Civilian Employees ²
1904-1930	3.19%	4.17%
1930-1952	2.19	4.42
1952-1961	5.41	4.46
1961-1970	6.03	5.23
1970-1975	6.01	8.07
1904-1975	3.71	4.69

¹See Table 4.

²Estimated by the author using data from Historical Statistics of the United States, Vol. I, p. 164 and Statistical Abstract of the United States, 1976, p. 381.

Table 6

Estimated Average Annual Compensation, 1976-77

Academic workers¹

Faculty 9-10 months' employment	\$20,700
Faculty 11-12 months' employment	25,000
Presidents	45,100
Deans and directors, schools and colleges	36,500
Top 11 administrative positions	28,900
18 other administrative positions	21,000

Other workers²

All civilian full-time employees	13,300
State and local government: full-time employees	12,900
Teachers in elementary and secondary schools	12,800
Federal civilian employees (CG grades)	16,700
Military officers: basic pay and allowance	20,000

¹From AAUP and College and University Personnel Association.

²Historical Statistics of the United States, Vol. I, p. 164 and projected forward on the basis of BLS data on average weekly earnings.

Table 7

Comparative Annual Salaries, by Type of Employer, 1976 (in thousands of dollars)

Higher Education, 1976-77		Federal Govt., 1976		Private Business, 1976 ⁵	
	Average salary 9-10 mos. ¹	Average salary 11-12 mos. ²	Position: General Schedule ³	Average salary ⁴	Position Average salary
Instructor, lower quartile	\$10.3	\$10.9	GS7	\$12.4	Accountants II \$13.4 Auditors II 13.4 Chemists II 14.1 Engineers II 15.2
Instructors (all)	11.9	12.6			
Instructors, upper quartile	12.7	13.5	GS9	15.0	Accountants III 15.4 Attorneys I 15.4 Auditors III 16.1 Chemists III 16.6 Engineers III 17.5
93 Assistant professors	14.8	18.4	GS11	18.3	Accountants IV 18.7 Attorneys II 18.7 Auditors IV 20.0 Chemists IV 20.4 Chief Accountants I 20.5 Engineers IV 20.7
Associate professors	18.1	22.6	GS12	21.8	Accountants V 23.4 Attorneys III 24.2 Chemists V 24.1 Chief Accountants II 22.8 Engineers V 24.1
Central administrative officials (18 lower-level positions)	-	21.7 ⁶			
Professors (all)	23.9	28.0	GS13	26.0	Attorneys IV 29.8 Chemists VI 28.9 Chief Accountants III 28.1 Engineers VI 27.7
Professors in doctoral- granting universities	28.4	33.0	GS14	30.5	Attorneys V 36.3 Chemists VII 33.6 Chief accountants IV 33.9 Engineers VII 30.9

Table 7 (continued)

Higher Education, 1976-77			Federal Govt., 1976		Private business, 1976 ⁵	
Position	Average salary 9-10 mos. ¹	Average salary 11-12 mos. ²	Position: General Schedule ³	Average salary ⁴	Position	Average salary
Professors in doctoral-granting universities at 99th percentile	31.7	37.1	GS15	35.6	Attorneys VI	43.7
					Chemists VIII	40.7
					Engineers VIII	36.2
Deans and directors of schools and colleges	-	38.5 ⁶	GS16	41.2		-
Top four central administrative officers	-	30.8 ⁶	GS17	44.9		-
President or chancellor	-	44.0 ⁶	Cabinet officer	63.0		-

¹Appendix C, table J.²Appendix C, table K.³For definitions of the various grades in the General Schedule, see the text.⁴U.S. Department of Labor, National Survey of Professional, Administrative, and Clerical Pay. Washington: U.S. Government Printing Office, 1976, pp. 64-65. Data for GS16 through GS18 are the basic annual rates for the middle grades: GS16, grade 5; GS17, grade 3; GS18, grade 1.⁵U.S. Department of Labor, op. cit., pp. 64-65.⁶Means, Estimated by the author from data in Appendix C, table K.

Table 8

Detailed Salary Comparisons, Faculty in Higher Education and Employees in Private Business, 1977 (in thousands of dollars)

Position	Typical degree	Typical years of experience	Average salary
Assistant professors, higher education:			
9-10 months contract	Masters or doctorate	10	\$14.8
11-12 months contract	Masters or doctorate	10	18.4
Comparable positions in private business:			
Mechanical engineer	B.S.	3-5	20.8
Mineral geologist	B.S.	3-5	19.2
Budget analyst	B.B.A.	2-4	17.0
Labor relations representative	B.A.	2-5	20.4
Attorney	J.D.	2-4	21.6
Equal Employment Opportunity representative	B.A.	3-5	17.3
Positions in business paying comparable salaries:			
Purchasing agent (Purchases under \$3 millions) -		substantial	15.4
Master electrician -		substantial	14.6
Foreman, manufacturing assembly -		substantial	15.0
Public relations representative	B.A.	0-1	14.5
Technical librarian	M.L.S.	3-5	15.0
Senior office manager	none	substantial	18.5
Electrical engineer	B.S.	1-3	17.6
District sales executive (Sales under \$1 million)	-	-	19.4
Quality control executive (Production volume under \$10 millions)	-	-	17.7
Credit and collections executive (Company sales under \$35 millions)	-	-	17.9
Budget analyst	B.B.A.	2-4	17.0
Petroleum geologist	B.S.	1-3	18.8

Table 9

Detailed Salary Comparisons, Faculty in Higher Education and Employees in Private Business, 1977 (in thousands of dollars)

Position	Typical degree	Typical years of experience	Average salary
Professor, higher education:			
All professors, 9-10 months contracts	Ph.D.	25	\$23.9
All professors, 11-12 months contracts	Ph.D.	25	28.0
Professors in doctoral-granting universities 11-12 months contracts	Ph.D.	25	33.0
Professors in doctoral-granting universities at the 99th salary percentile, 11-12 months contracts	Ph.D.	25	37.1
Comparable positions in private business:			
Nuclear engineer	Ph.D.	over 10	32.3
Physicist	Ph.D.	over 10	35.4
Systems and programming manager	B.S.	substantial	26.0
Attorney	J.D.	over 8	31.9
Lead operations research analyst	B.S.	substantial	25.0
Tax research manager	-	substantial	28.9
Corporate economist (utilities and transportation)	-	substantial	29.5
Security investments director (banks, finance, and insurance)	-	substantial	30.0
Process research executive, manufacturing (research budget over \$250 thousands)	-	substantial	30.6
Positions in business paying comparable salaries:			
Reliability and quality assurance executive (production \$20 to \$50 millions)	-	substantial	25.2
Corporate insurance administrator (property \$150 to \$300 millions)	-	substantial	24.5
Long-range planning executive, second level (sales under \$500 millions)	-	substantial	29.0
Cost accounting executive (costed products over \$200 millions)	-	substantial	27.9
Plant or factory manager (production \$20 to \$50 millions)	-	substantial	32.6
Management development executive (employment over 10,000)	-	substantial	34.9
General accounting executive (assets over \$900 millions)	-	substantial	36.9
Personnel manager (employment over 16,000)	-	substantial	40.8
Research and development executive (research budget over \$950 thousands)	-	substantial	39.3
Top research executive (sales \$5 to \$10 millions)	-	substantial	32.2
Top industrial relations executive (sales \$50 to \$100 millions)	-	substantial	40.3

Table 9 (continued)

Position	Typical degree	Typical years of experience ²	Average salary
Top electronic data processing executive (sales \$200 to \$500 millions)	-	substantial	\$37.4
Top public relations executive (sales \$200 to \$500 millions)	-	substantial	39.9
Top advertising executive (sales \$200 to \$500 millions)	-	substantial	37.5
Top financial executive (sales \$10 to \$25 millions)	-	substantial	39.5
Top controller (sales \$25 to \$50 millions)	-	substantial	31.2
Top engineering executive (sales \$25 to \$50 millions)	-	substantial	36.8

Table 10

Detailed Salary Comparisons, Top Executives in Higher Education and Private Business, by Size of Organizations, 1977 (in thousands of dollars)

Positions	Average Salaries by Size of Organization ¹		
	Small	Medium	Large
Chief executive officer, higher education	\$34.6	\$ 40.8	\$ 50.0
Chief executive officer, business	75.3	104.9	164.4
Chief academic officer (HE) ²	25.1	33.9	43.6
Chief operating officer (B) ²	68.0	93.0	140.9
Chief manufacturing executive (B)	40.3	58.7	71.4
Chief planning officer (HE)	20.1	26.1	30.4
Long-range planning executive (B)	-	39.6	41.8
Staff legal counsel (HE)	14.1	17.7	28.6
Top legal executive (B)	-	55.8	64.1
Chief business officer (HE)	23.7	29.6	40.1
Top financial executive (B)	39.6	61.1	82.2
Treasurer (B)	37.6	45.7	54.0
Chief student life officer (HE)	18.8	28.3	36.3
Top industrial relations executive (B)	26.5	40.3	53.1
Chief development officer (HE)	22.7	26.7	33.1
Chief public relations officer (HE)	14.7	20.2	31.9
Top public relations executive (B)	-	-	39.9
Top advertising executive (B)	28.6	31.2	37.5
Admissions director (HE)	16.6	21.0	26.2
Top marketing executive (B)	43.4	60.3	71.9
General sales executive (B)	36.3	42.0	55.1
Director, computer center (HE)	16.0	22.7	33.4
Top electronic data processing executive (B)	25.8	30.1	37.4
Controller (HE)	17.6	20.9	28.1
Controller (B)	27.3	39.4	49.2
Purchasing agent (HE)	13.5	16.1	24.4
Top purchasing executive (B)	22.3	35.5	39.5
Dean, Arts and sciences (HE)	19.2	30.3	40.1
Deans and directors, schools and colleges, average (HE)	18.4	26.8	35.8
Top engineering executives (B)	29.5	41.2	53.3
Top research executive (B)	32.2	41.4	54.9
Top product development executive (B)	39.2	44.6	52.1

SOURCE: American Management Association, Executive Compensation Service, Top Management Report. New York: AMA, 1977, pp. 183-91. College and University Personnel Association, 1976-77 Administrative Compensation Survey. Washington: CUPA, 1977, pp. 12, 19, 23. Data for business apply to calendar year 1977 and for higher education to fiscal year 1976-77.

¹The size designations are defined as follows:

	<u>Business (sales)</u>	<u>Higher Education (enrollment)</u>
Small	\$10 to \$25 millions	1,000 to 1,499 enrollment, private
Medium	50 to 100 millions	5,000 to 9,999 enrollment, public
Large	200 to 500 millions	20,000 to 29,999 enrollment, public

These size categories were deemed to be comparable for private business and higher education considering revenues in higher education plus presumed foregone income of students as equivalent to sales in business.

²HE refers to "higher education."

B refers to "business."

COMMENT

Robert Payton

I confess that I come to this subject very recently from that segment of American higher education that is dependent on income derived from student fees. I'm not a product of that system because I am a veteran of WW II and I never paid a dollar of tuition until I took a course at Hofstra and objected to the high cost of education. The tuition dependent college and university like the college and university that has small endowments -- somebody, I think, said today or this morning that 100 institutions in the U.S. had endowments of 5 million dollars and up (commentator said "fewer than a hundred and a few of those are public institutions") like Texas and Michigan -- and I think that when we talk about American higher education we are blinded by the prestige institutions and the very special conditions that pertain there both in terms of the characteristics of the students, the kind of education environment, the institutional supports available for faculty, the definition of work load, the concept of productivity as involving significant research, and a variety of other considerations that have much less influence on decision making in the tuition-dependent institutions.

I shall go a little bit further than that and include those institutions that are essentially enrollment dependent which include most of the community colleges and most of the four year colleges of state college systems that do not have substantial funds for research either from state or from the federal government and whose staffing pattern is determined on an annual formula or a bi-annual formula related to the funding established by the state legislature which essentially says how many students you have determines what you can do. Obviously that's the same kind of question that for a private college or independent college -- as the euphemism goes -- is operative. In that grim world most of the values that characterize our ideologies in higher education simply don't prevail in the same way. The values are different. The values are far more materialistic, far more economic than educational, and are undergoing a kind of change where the overall character of American higher education I think is significantly different from the concept that most of us have had about it during most of our professional careers and I think I want to say that the character or the quality of life in higher education in the last 20 years is changing steadily and significantly for the worse on that set of criteria; in terms of those values, the quality of professional life in higher education is far less agreeable, far less attractive, far less professionally compelling than it was not so long ago. You can go at whatever level of extreme

you want to enter into this question. Dr. Kibbee is notorious for being the only person who has a job that is really worse than the Mayor of the City of New York. But it's true obviously of young instructors, it's true of harassed administrators, it's true of people who have found their way in higher education as careers with one set of expectations and find themselves in institutions where those expectations simply cannot be realized, will not be realized. We are dealing with a different set of considerations from those that are implied by a lot of our economic considerations.

There are some good aspects of this. In my personal opinion the decision to abandon requirements in significant number in the academic year 1969-70 in most places where it happened was an unfortunate decision that had adverse consequences on the education of most undergraduate students in higher education institutions since that time. There is now a wave of new interest in reforming, restoring, reestablishing, representing the concept of general education. The most compelling argument I've heard for it is economic. With fewer course offerings, the educational system is more economic than a random elective system. And if that's the only way we can get back to general education maybe we should take advantage of it. Let me tick off some aspects of this quality of life that seem to me to have a great deal to do about the quality and character of people who are attracted to the profession that we identify ourselves with. In general, campuses are very agreeable places to work, with some urban exceptions, even some rural exceptions, but by and large campuses are safe, secure, agreeable places to be. Particular working conditions are sometimes disagreeable. Classrooms are not notoriously well-maintained. Chalk is not consistently provided for blackboards. The general condition of faculty office space can become a very serious irritant. As Clark Kerr one time said, the definition of a university is a collection of schools and departments held together by a common grievance over parking. So there are limitations.

Job security has obviously been a matter of significant incentive for people to come into this kind of work, particularly people who like to do research and who do not like to be held accountable for generating a certain amount of income on a regular basis in order to sustain themselves. Social esteem has been I think a very powerful influence. It used to be extended to secondary public school teachers. If you look at the condition of the public school teacher in his community and how that relative standing has fallen, I think you see the future of the relative social prestige of college professors. Flexibility of schedule is an economy of administration, as is a generally controlled curriculum. And as systems become more complex, and as the availability of offerings depends on student convenience, the control over the flexibility of schedule for the individual faculty members is obviously going to continue to be reduced.

Participation in decisions generally is a mistake. That is to say it requires a great deal of time and has imposed a heavy burden on faculties and administrations. The results of increased participation I think are yet to be found, i.e. the positive results of increased participation. Searches for college presidents have not shown greater wisdom since students and faculty and trustees have jointly been involved with them as public events than when they were done in secret cabals in Rotary clubs. Public cabals are not necessarily better.

A young man was asked if he were interested in joining the administration as an assistant dean and he said what will this mean to me in

terms of my income because presumably I will have to be around more on a different schedule. He then figured it out. He made an assumption that administrators and faculty each work five day weeks. He then said, given the academic calendar, how many days will I be expected to work if I work five days on all those weeks when the university is working. And it came to 150 days. If he were a member of the administration, working full-time, he'd have to work 235 days. Same calendar, same institution, same practice. He calculated on a quick basis -- he's a political scientist but he still figured it out -- that the increase that he needed to compensate for this loss of control over his personal time was greater than we were prepared to offer him at the time as I recall. To compute the value of that time, one way to do it is to figure out what your average faculty salary is. I once did this with an average faculty salary of \$17,000 or some such, and it came out to a certain number of days for the year that it'd be say \$110 per day. And if you paid a person \$110/day, that same rate, 365 days you'd pay him \$37,596 or something. Then you could say to him, we will pay you \$37,596 and we will sell back to you at \$110/day every day off you want during the course of the year. How many people would buy back all those days they now have? The kinds of pressures of that kind of calculation are made ludicrous by examples like that, but, I assure you, they are entirely real and so very characteristic of the effort to balance the pressures on expenditure at a time when there is an institutional policy that being fair in compensation is more important than anything else, that the continued losses of other characteristics of life in order to sustain salaries are going to be such that the situation is not going to get better as salaries improve, but will get worse.

COMMENT

Harold Hochman

I find Dr. Bowen's paper not only useful and informative but, to a point, constructive. The paper argues, properly, that the costs of higher education turn largely on faculty salaries and focuses on this issue.

It is reassuring to know, statistically, that the academic community in general is still in decent shape -- albeit in much the same sense as it is nice to know that others have been cured of a disease from which one is about to die. It is also reassuring that Dr. Bowen, as a distinguished academic administrator and scholar, does not tell us that faculty should henceforth treat sacrifice rather than income as their primary source of self-perceived well being. Asceticism, like celibacy, may be admirable; but it holds little appeal.

Informative though this paper is -- however, there is a sense in which I come away from it as hungry as full. The reason is that it is essentially descriptive and does not, even implicitly, contain a positive model, capable of telling us where supply and demand will take the academic marketplace, or a normative model, telling us where this marketplace should take us -- where academic compensation as well as its place in overall institutional costs, should be going. In making much less influencing public policy, aggregate data, reflected in averages, are insufficient.

Perhaps I am asking too much, but I would be far more comfortable if Dr. Bowen had discussed the evidence he has marshalled within the emergent theory of non-profit institutions -- and made some attempt to explain the behavior of academic institutions in terms of the modern theory of bureaucracy -- for in the non-profit world of higher education, private and public, it is self-interest and bureaucratic incentives that seem to control outcomes. Much of this work derives, at least indirectly, I might add, from seminal contributions of Dr. Bowen himself.

(1) Since neither students nor institutions are homogenous, Bowen's data leave me knowing little more than I already did about how many students of which types and what kinds should comprise the academic community. As bureaucratic rent seekers (in other words, as an interest group), it is convenient for educators to argue that more is better, contenting ourselves with teaching anything to anyone, regardless of whether the educational production process has a product in terms of human capital or our attempt to transfer knowledge creates market value. For a long time we seemed able to do this with virtual

impunity -- because public and private interest coincided or because self-interest could masquerade as fairness. But the political process cannot be expected to indulge us in this as readily as it did a decade or two ago. This is not a matter of partisan politics. Jerry Brown, after all, has turned out, for the purposes of the academic community, to be no different from Ronald Reagan. Only in the very short run can exhortation do the right thing, as we perceive it, hold back basic market forces -- even if we impute moral force to our private interests.

I would be happier if I could find reasons why the political community should grant us the wish that academic salaries keep pace with compensation elsewhere. But the only thing that seems clear to me is that the rigidities and the ideologies that control our delivery process will not help in achieving this outcome.

(2) A related point, which should also be obvious, is that college and university faculties are not homogeneous. Contrary to the fairy tales that we sometimes repeat to each other, academic excellence and academic performance are inherently anti-egalitarian. It takes little introspection for me to recognize that I am neither Adam Smith nor Kenneth Arrow; it also takes little insight to recognize that we judge and are judged by relative and not absolute standards.

Whatever we recommend in the area of faculty salaries, it cannot apply across-the-board if it is to be viable. In the future, academic administrators must simply face up to the fact that the provision of education requires the same kinds of hard decisions, differentiating among inputs -- excuse me, faculty members and departments -- as any other industry.

A simple application of the theory of bureaucracy is instructive. In better days, rampant gains, attributable to rising demand, could be readily diffused among the suppliers of educational services, because pressures to economize were low. Everyone could prosper. As a result, it was easy to institutionalize an egalitarian outcome, characterized by a simple salary scale, in which seniority was controlling. Under present conditions, however, those who finance us are no longer willing to countenance this luxury. Thus, while a simple call to maintain relative faculty compensation might rally us, it also leads, by extrapolating the past, down a blind alley. Professors provide services, and some offer service⁹ that those who foot the bill do not consider essential. Levels of compensation, within and among academic fields, not only should but must depend on demand, not just supply, or many of us will go the way of the glass-blowers. The sooner the educational community gears its reward system to the market analogue and the less it confounds its business -- the production of knowledge through research and human capital -- with its Christmas wish, which the market will grant only when demand is booming and rents are large, the healthier it will be. Not only legislators, but alumni and parents -- in short, those on whom we depend for our living -- are from Missouri, even when they come from Syracuse.